Gleanings in Bee Culture

ESTABLISHED 1873

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FEBRUARY, 1935

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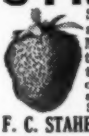

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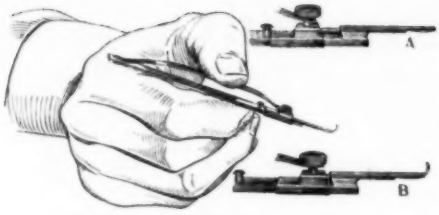
Paducah, Kentucky



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Full weight of bees in very neat light packages.

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Two-pound Combless Package, with Queen ..... 2.45 each

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Summary of Government Market Report

Temperatures have ranged widely during this period. It has been sufficiently warm so that bees have been able to fly throughout many of the northern states on several days, though there have been periods of sub-normal cold and snow. Wintering is said to be good to date, both with bees packed outdoors and those in cellars. Brood rearing is under way on the Pacific coast and in the South where prospects for package bees and queens are reported good.

As stocks of honey continue to lessen the market has strengthened further, and many are holding remaining stocks for higher prices. Demand has improved since the holidays, and already many beekeepers do not have sufficient honey remaining to take care of local customers. Export trade continues very light. Stocks of comb honey are light almost everywhere.

Monthly Report of Honey Producers

Early in January we sent the following questions to honey producers: 1. What per cent of the honey produced in your locality has already left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair, or rapid? 6. How does the number of colonies being wintered in your locality compare with that of last year? Give answer in per cent. 7. What is your estimate of prospects for a normal honey crop in 1935, considering the present condition of the bees and the honey plants? Give answer in per cent of average crop for your locality. The answers received are tabulated below:

State. Name.	Pct. sold.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	To retailers. Ex.	To retailers. Comb.	Movement.	Colo. wint.	Esti. of 1935 crop.
Ala. (J. M. Cutts)	..	..	..	.55	..	.65	..	Fair	108	100
B. C. (A. W. Finlay)	..	.10	..	.65	..	.80	..	Rapid	105	100
Calif. (L. L. Andrews)	..	.06⅝	..	..	..	.62	.15	Fair	75	75
Colo. (O. E. Adcock)	90	.05¾	..	.40	..	.50	..	Fair	100	50
Colo. (J. A. Green)	..	.06	..	.32	..	.42	..	..	..	..
Conn. (A. Latham)	20	..	..	.75	4.75	1.00	.28	Fair	100	125
Fla. (C. C. Cook)	80	.05	..	.40	..	.55	..	Fair	90	100
Fla. (H. Hewitt)	100	..	..	.40	..	.55	..	Rapid	90	75
Ga. (J. J. Wilder)	95	.06½	..	.55	..	.65	..	Rapid	110	90
Ida. (R. R. Isbell)	87	.05¾	..	.42	..	.48	.18	Fair	120	110
Ill. (A. L. Kildow)	80	.06	2.50	.50	3.00	.75	.15	Slow	95	..
Ind. (Jay Smith)	75	..	..	.60	3.00	.75	.15	Fair	100	100
Ind. (T. C. Johnson)	50	..	..	.50	3.60	.60	.20	Slow	100	100
Ind. (E. S. Miller)	30	..	..	.60	3.60	.75	.20	Slow	90	95
Iowa. (E. G. Brown)	100	..	..	..	..	.65	..	Fair	100	..
Iowa. (F. Coverdale)	95	..	..	..	..	..	.15	Fair	95	90
La. (E. C. Davis)	90	.06	..	.40	..	.55	..	Fair	100	100
Me. (O. B. Griffin)	70	..	..	..	5.00	..	.30	Slow	90	90
Md. (S. G. Crocker, Jr.)	..	..	..	.60	3.50	.75	.20	Slow	100	..
Mich. (Ira D. Bartlett)	60	..	..	.50	3.60	.60	.20	Fair	90	90
Mich. (L. S. Griggs)	40	..	..	.45	2.50	.55	.15	Slow	110	100
Minn. (F. W. Ray)	60	.07	..	.50	..	.59	..	Fair	90	90
Minn. (B. L. Morehouse)	65	.07	..	.45	4.32	.60	.23	Fair	75	60
Nebr. (J. H. Wagner)	..	..	..	..	..	.70	.20	Slow	100	80
Nev. (Mrs. E. G. Norton)	100	.05	..	..	..	..	..	Fair	80	80
Nev. (Geo. G. Schweis)	..	..	..	..	..	.40	.15	Rapid	100	100
N. Y. (Adams & Myers)	..	..	..	.50	3.60	.75	.20	Slow	80	75
N. Y. (Geo. B. Howe)	..	..	..	.50	3.60	.65	.20	Fair	100	75
N. Y. (F. W. Lesser)	75	.07	3.00	.45	3.40	.60	.18	Fair	95	100
N. C. (C. S. Baumgarner)	100	..	..	.75	..	.90	.25	Slow	75	75
N. C. (W. J. Martin)	..	.05	..	.70	..	.85	.20	Fair	100	100
N. D. (M. W. Cousineau)	.07	..	..	.55	..	.45	..	Fair	75	..
Ohio. (F. Leininger)	75	.06½	..	..	..	..	..	Fair	100	90
Ohio. (J. F. Moore)	30	.07	..	.50	3.50	.65	.18	Slow	90	80
Ohio. (R. D. Hiatt)	60	.07	..	.55	3.50	.70	.20	Fair	100	85
Okla. (C. F. Stiles)	80	..	..	.50	..	.65	.18	Fair	80	80
Ore. (H. A. Scullen)	35	..	..	.37	..	.50	..	Slow	110	100
Pa. (H. B. Kirk)	..	..	..	.70	3.38	.90	.22	Slow	75	90
S. C. (E. S. Prevost)	100	..	..	.62	..	.75	..	Slow	80	70
S. D. (L. A. Syverud)	..	..	..	.48	..	.59	..	Slow	75	..
Tenn. (J. M. Buchanan)	95	..	..	..	..	.75	.20	Slow	100	90
Texas. (T. A. Bowden)	95	..	..	.50	..	.60	..	Fair	80	50
Texas. (J. N. Mayes)	100	.05	4.20	.40	4.20	.40	..	Rapid	90	..
Texas. (H. B. Parks)	100	..	..	.45	..	.60	..	Fair	110	100
Utah. (Ray N. Miller)	80	.05¼	..	.40	..	.50	..	Slow	80	85
Vt. (Phillip Crane)	..	..	3.75	..	..	..	..	Slow	65	..
Wash. (G. W. B. Saxton)	20	..	..	.42	..	.49	..	Fair	100	100
W. Va. (W. C. Griffith)	40	..	..	.35	2.00	.50	.12	Slow	150	100
Wis. (N. E. France)	90	..	..	..	..	.48	.15	Slow	80	100

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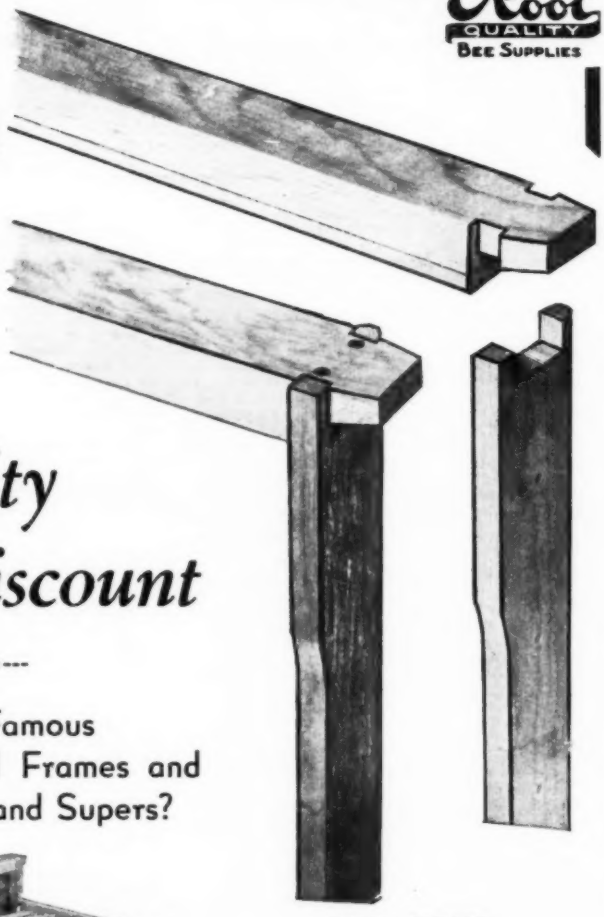

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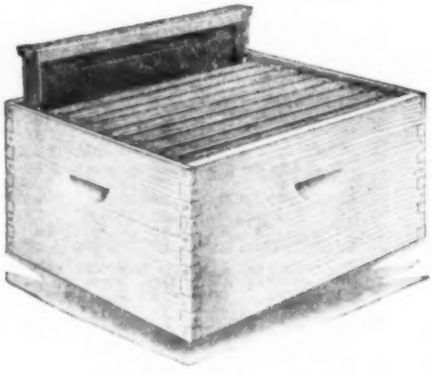

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Carniolans-Caucasians

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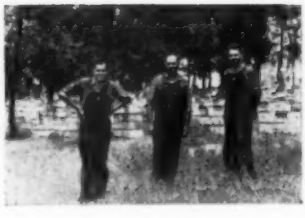
E. G. BROWN

The Brown Family Believes in Beekeeping

My father, L. M. Brown, became a commercial honey producer in 1883, but he had been engaged extensively in farming and dairying since 1855. In 1903 he told me that beekeeping was one of the most stable lines of agriculture. My own thirty years of bee work have proven his wisdom. My two sons, the third generation, are now actively engaged in honey production with me and we also believe that beekeeping is a profitable agricultural enterprise.

E. G. BROWN,
President, Sioux Honey Association.



We also believe in

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as the best means of maintaining our supply of **FORTY THOUSAND PERFECT COMBS.** In our system of management, we draw six sheets of Dadant's Wired Foundation into combs each year in each of our 1200 brood chambers. We must have combs too that will give us **PURE BEESWAX** and Dadant's foundation also insures us of that.—E. G. Brown.

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made only of pure, clean beeswax.

Dadant & Sons, Hamilton, Ill.

Makers of Famous Foundations

Wired—Plain—Surplus

Vol. 63
No. 2

Gleanings in Bee Culture

February
1935

The Valdosta Meeting in Perspective

E. R. ROOT

Some of Its Personnel and What They Did

In our last issue we attempted to give only a general impression of the joint meeting, or event, that, measured by its results, is believed to have been the greatest of its kind in the history of beekeeping in the United States, if not in the world.

That three major organizations could function so well without friction and without overlapping at the same time and place is remarkable. It shows good planning and generalship. Fortunately, the officers of the three organizations representing different territory and different purposes were well selected. They did their work so well that they were all re-elected, except President W. E. Harrell, of Hayneville, Alabama, who asked to be relieved, as follows:

Jas. I. Hambleton.

Geo. W. Bohne of Luling, Louisiana, President, and G. G. Puett, Hahira, Georgia, Secretary of the Bee Shippers' Federation of the Southern States Beekeeping Conference; J. W. Newton, Baton Rouge, Louisiana, President, and Prof. V. G. Milum, Champaign, Illinois, Secretary of the American Honey Producers' League; Prof. Russell H. Kelty, East Lansing, Michigan, President, and Mrs. Malitta F. Jensen, Madison, Wisconsin, Secretary of the American Honey Institute.

With so many on the program covering the four days of the convention, it was feared that some speakers would take too much time and that others could not be heard at all. This was met by the announcement from each presiding officer at the beginning of each day that no speaker would be allowed more than his allotted time. The result was that the program went through like clockwork.

The committees of the various organizations were so well selected that their reports were accepted on the floor of the convention without a question. In fact, it seemed to be the primary purpose of the officers and the committeemen to work for the good of beekeeping for every section of the country, North as well as South, East as well as West.

It should be explained that the committees in many cases worked clear up into the small hours of the night. There are several of these hard workers that deserve special mention.

First and foremost was the untiring secretary, G. G. Puett, of the Southern

Conference. Then there was Tom Burleson of Texas, J. W. Newton of Louisiana, Russell H. Kelty of Michigan, M. G. and L. C. Dadant of Dadant & Sons, Kenneth Hawkins of the G. B. Lewis Co.; Prof. H. F. Wilson of Wisconsin, Prof. V. G. Milum of Illinois, E. G. Brown of Iowa, Mrs. Malitta F. Jensen of the Institute, W. E. Anderson of Louisiana, E. G. LeStourgeon of Texas. The last named not only worked hard in committees but he is a pastmaster as a toastmaster at any bee convention.

President Russell H. Kelty delivering his address on the floor of the convention before the American Honey Institute meeting. He was not aware of the presence of the camera.

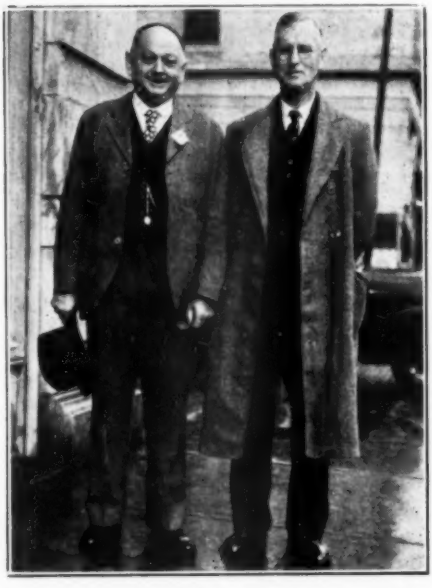
He is the "Guy" who made every one happy at the banquet by his introductions and ready wit.

Then there was Fred Muth, one of the pioneers, who made a nice little speech in favor of the American Honey Institute, and then passed the hat. Then there was Miss Mary I. Barber, of the Kellogg Co., Battle Creek, Mich. She, with Mrs. Jensen, always captures the house with her talks on honey. They had the biggest crowd at any of the sessions.

Probably the biggest piece of work accomplished at the convention was the adoption of the marketing agreement covering the bee package business. At first there were rumblings of dissatisfaction on the part of bee shippers as well as their customers. Fortunately, there was present from Washington, D. C., Prof. R. H. McDrew, to advise us. Excerpts from his article appear on page 77.

J. W. Newton, Baton Rouge, La., delivering his president's address before the members of the American Honey Producers' League.

The bone of contention was the question of discounts on package bees to jobbers and large buyers. Prof. McDrew carefully explained the attitude of the administration and after hearing from both sides proposed a remedy in the form of an



J. J. Wilder, Waycross, Ga., and W. D. Achord, Findlay, Ohio. Mr. Wilder once had thousands of colonies in Georgia. Mr. Achord is the father of the package bee business in the South. He was the first to make successful bee shipments to the North.

Prof. J. M. Robinson of Auburn, Ala., managing director of the Marketing Agreement and License for Shippers of Bees and Queens.

amendment which, if accepted by the Secretary of Agriculture, will make everybody happy. There is every reason to believe that the amendment will be accepted. It was good committee work plus a sympathetic and intelligent government official that worked this out.

The marketing agreement of last year measured by the few or almost no complaints was a great success. The new agreement, it is believed, will work out even better than the last one. In a nutshell, the North must have package bees and is willing to pay a fair price. The South is in a position to furnish the bees, full measure and young bees. The agreement will prevent price cutting and poor quality. The chap that is not willing to "give all wool and a yard wide" will be shut out. The price schedule will be about the same as last year. See page 117 of this issue for copy of the agreement as amended.

If the International Congress had accomplished no more at Valdosta its work would not have been in vain; but it did a lot more as shown by the various resolutions passed.

One resolution passed by the American Honey Producers' League was to the effect that a special committee be provided to take care of problems of adverse legislation relative to curtailment of funds and activities of the U. S. Bee Culture Laboratories. For the League, President Newton appointed the following: K. Hawkins, chairman; E. R. Root, E. G. LeStourgeon, W. E. Anderson, Thomas Atchison.

The Fine Team Work

Another outstanding feature of this Congress was the splendid team work on the part of every one. It could not be otherwise with the spirit of peace on earth and good will toward men that prevailed and that was so in keeping with the sea-

The long and the short of the big International Congress of Beekeepers. The one at the left is S. J. Head, Atchafalaya, La. The genial Mr. C. B. Gooderham, Dominion Apiarist at Ottawa, Canada, is on the right. He is the big man in Canada.

Dr. M. C. Tanquary, University of Minnesota, St. Paul, and J. D. Hayne, Janesville, Fla.

son. It was the greatest hand-shaking convention that I have ever attended and I have attended almost every national meeting in this country for the last fifty years. I know I am safe in saying there has been none like it before.

The Unconventional Convention

The program committee, appreciating the value of little group meetings, left wide spaces between the general sessions with no sessions in the evenings except at the barbecue on Tuesday night and the banquet on Wednesday night. Even during the sessions there were many groups of beekeepers at the exhibit building in front of the convention hall. These continued until after midnight.

W. Z. Hutchinson, former editor of the Beekeepers' Review, used to say that the best part of any bee meeting were the unconventional conventions between the regular sessions of the program. In these beekeepers can get together and talk over their problems.

D. D Donovan, Clemson College, S. C., and Harold J. Clay, Washington, D. C. The latter is the one who has been furnishing our government honey market reports.

The Great Lights of Bee Culture

There were so many of the great lights in bee culture that some of the lesser

A. M. Bonar, left; E. G. Brown, Sioux City, Iowa, and F. W. Muth, Cincinnati, Ohio. All three worked hard for the success of the International Beekeepers' Congress.

lights sought out the big ones for more light on their individual problems. At no convention that I have ever attended has there been so many of the leaders from every state. Valdosta excelled any other city twice over in the leadership that was present and no wonder there were groups of beekeepers everywhere.

Snapshots of the Convention

With my camera with a fast lens purchased especially for this convention, I tried to catch the personnel of these groups; but I could not be everywhere just when I could get the right kind of a shot. I took a number of pictures, some in the rain in front of the exhibit building, some in the convention hall, and some outdoors in front. I tried to take them unaware of my presence to get rid of that conscious camera stare. I caught President Newton and President Kelty in the convention hall while they were speaking. I endeavored to snap some others of the leaders, but did not always succeed. The pictures with the legends beneath will tell their own story.

The General Program

So far I have not said a word about the excellent talks and papers on the regular program. I had to be absent so much of the time in committee work that I did not hear many of the speakers. I delegated this job to my associate, Mr. Deyell, who took notes not of what every speaker said but of as many as his time would permit. See page 87.

Marketing Agreement and License

R. H. McDREW
Marketing Specialist of the Agricultural Adjustment Administration

Excerpts from an Address Given Before the National Conference of Beekeepers and Shippers of Package Bees and Queens Held at Valdosta, Ga.

In discussing this agreement and license, I would like to start with fundamentals so that every shipper of package bees and queens might be informed as much as possible of its obligations and benefits.

First of all, let me state that I have observed in the bee journals and in official and private correspondence in reference to this agreement and license that they are usually referred to as the "code" or the "trade agreement." In my judgment these terms are misleading, and indicate that either this marketing agreement and license is a code under the National Recovery Act or a private trade agreement among the shippers of bees and queens. Neither is true. It is believed that it would help to stamp the marketing agreement as a document drawn under the Agricultural Adjustment Act if those who have occasion to refer to it will call it what it is, a marketing agreement.

This marketing agreement is not merely a private compact among shippers, but is a document which is sanctioned and developed in accordance with the Federal law known as the Agricultural Adjustment Act. This law provides that the Secretary of Agriculture may enter into marketing agreements with processors, associations of producers, and/or producers for the purpose of bringing prices of agricultural products more nearly to the parity price which may be defined in a general way as the price of agricultural products which prevailed during the base period, August, 1909, to July, 1914.

In accordance with the Act, the Secre-

tary of Agriculture has promulgated certain rules and regulations to govern the procedure in effectuating a marketing agreement. This procedure has been complied with both in letter and in spirit, to the end that you have today in full force and effect this marketing agreement under the laws of the United States, which is binding on every one of the 75 per cent of the industry who signed it.

It was realized by the members of Congress that a marketing agreement, made effective under the Agricultural Adjustment Act, might not be effective to accomplish its purpose if a minority of the industry did not sign the agreement and did not comply with its terms. To prevent the possibility of an unwilling minority defeating the purpose of the agreement, the Secretary of Agriculture was given power to issue licenses to require this minority to co-operate with the majority to make effective the policy of the Act. In furtherance of this policy the Secretary of Agriculture, simultaneously with the approval of the marketing agreement for the shippers of package bees and queens, also executed a license for all shippers of package bees and queens, which license has substantially the same terms and provisions as the marketing agreement.

This license became effective, as a matter of law, as to every person in the United States who ships package bees and/or queens. Licenses, under the Agricultural Adjustment Act, are not evidenced by an official document which can be manually delivered to each shipper. It is different, in that respect, from the paper license that you receive giving you the privilege to operate your automobile on the streets, or conduct a grocery store in your city, or to practice the profession of medicine. I repeat that the very fact that you ship package bees and/or queens makes you a licensee, whether you signed the agreement or not, and subject to all of its terms and provisions.

A violation of the terms of this marketing agreement and license is at least an indirect violation of the laws of the United States, and is made, by law, subject to action in the Federal courts. The Act specificially provides that the Secretary, after according to the interested party a hearing, may revoke a license for the violation of its terms, and if any person carries on the business covered by the license, after it has been revoked, he is subject to a fine of a thousand dollars a day for each day he operates the business covered by the revoked license.

The marketing agreement and license authorizes the Control Committee and the Managing Director to do certain things, and when they act in accordance with these documents their action is just as binding on the shippers as though such action were taken by the Secretary of Agriculture himself.

Since arriving at Valdosta, I heard it whispered around the corners that Washington has been trying to "run" this agreement, and that it is difficult to have done what ought to be done because the members of the staff of the Agricultural Adjustment Administration do not always understand the problems of the industry. This rumor probably arose due to the fact that the Agricultural Adjustment Administration did not see fit to approve quantity discounts in a recently proposed schedule of minimum prices, which will be discussed later. But the fact is that perhaps the chief difficulty in the early operation of the agreement and license arose because the members of the staff of the General Crops Section, who knew something about the procedure under agreements and licenses, did not offer suggestions to the Control Committee as to what they should do about it. Later, it was found that the Committee had not proceeded regularly in some of its attempted action, due wholly to the fact that it was not familiar with some of the necessary procedure. Assistance of the General Crops Section was requested, that assistance was cheerfully given, and now you may be assured that you have a really effective marketing agreement and license, effective in accordance with the laws of your country.

The minimum prices which purported to be in effect prior to the first day of this month, were prices that were attempted to be established by the present Control Committee before the marketing agreement and license became effective and before there was, as a matter of law, a legally-acting Control Committee. Hence no shipper of package bees and queens can be properly charged with the violation of the marketing agreement and license if he failed to observe any purported schedule of minimum prices which existed prior to December 1, 1934.

However, at its November 2 meeting,

the Control Committee proposed a schedule of minimum prices in accordance with the terms and provisions of the marketing agreement and license. This schedule of minimum prices was approved by the Secretary on December 1, 1934, but had all discounts eliminated from the proposed schedule. It was the failure to approve the discounts that was the occasion for many of the shippers of package bees and queens and also the buyers to object to, and protest against, the December 1 schedule.

When it was learned that the industry did not generally approve this schedule of prices, and that it was desired to have a schedule with discounts, it was explained both to the Control Committee and to members of the industry that quantity discounts could not be approved by the Secretary on account of the likelihood of discrimination against the small shipper. It was given as my opinion that the Secretary would consider favorably the approval of a reasonable dealer discount if proper justification could be furnished for it. Thereupon, the Control Committee, after advising with a large number of leaders and state officials interested in the welfare of the bee shipping industry, re-adopted the December 1 schedule of prices with an allowance of a dealer discount of 15 per cent from that schedule. One further amendment was made to bring the price of nuclei down to the same price as packages. In due time the Secretary of Agriculture will either approve or disapprove this amended schedule of prices, but, until the new schedule is approved, the December 1 schedule will remain effective. (Later—See page 117.)

If there are any persons here who still believe that quantity discounts should be approved by the Secretary of Agriculture, I hope you will get this point: Some of the provisions of this marketing agreement and license are in direct conflict with the anti-trust laws of the United States, and so far as that conflict exists the terms of the marketing agreement and license supersede the provisions of the anti-trust law. This situation places a heavy responsibility upon the Secretary of Agriculture to see to it that this suspension of the anti-trust law does not result in injury to small operators or to the general welfare. It is, therefore, incumbent upon the Secretary, not only for the purpose of securing public support of the beneficial provisions of the Agricultural Adjustment Act, but also to prevent unjust injury to any element of the industry to scrutinize very carefully any action under the marketing agreement and license which would tend toward the creation of a monopoly.

We sometimes receive letters in Washington from those who have not signed marketing agreements complaining that the terms of the licenses issued by the Secretary, supplemental to marketing agreements, interfere with their constitutional rights. I have attempted to analyze very carefully the terms of the licenses for shippers of package bees and queens issued by the Secretary, and I can see nothing in its provisions which would interfere with any shipper's constitutional privileges. On the other hand, it appears to me that by sacrificing a little liberty by a licensee here and there, for the good of the group, he will secure much more freedom—and more money, too. Do not forget that in every walk of life we meet literal or figurative traffic lights which compel us to stop and think about the welfare of others, and by thus curtailing a little bit of our own liberty we not only contribute to the protection and welfare of society, but to our own protection and welfare as well.

I desire to congratulate the shippers of package bees and queens for their almost unanimous co-operation in making effective this agreement and license. I am told by the Managing Director that his records show that about 95 per cent of the shippers have complied in letter and in spirit. No better co-operation can be found in any other group of farmers.

Now, just a word as to your future obligations under this agreement. Those who have not made their reports to the Managing Director as requested by him from time to time are legally obliged to do so now and also are legally required to pay their assessments on all business transacted since May 6, 1934. To summarize briefly the three major obligations under the agreement:

(1) You must make your reports as requested by the Managing Director.

(2) You must pay all back and current assessments, if any are due.

(3) You must observe the minimum prices that are in effect at the time you make a sale.

One additional comment on minimum prices. These minimum prices are just what the word "minimum" implies. If any

of you feel that the minimum prices are too low, then you may let your conscience be your guide in charging higher prices. These are simply bottom prices to prevent the "chiseler" or other person from ruining the industry by unduly cutting prices.

We believe that this marketing agreement and license is on its way to be of great help to the producers of package bees and queens. The members of the staff of the General Crops Section will spend as many sleepless nights in Washington as is necessary to help you carry on in an effective manner.

What Package Bees May Do

J. H. MERRILL, Ph. D.

Success With Packages Depends on Knowing How, What, When and Why

Package bees should meet the needs of the individual purchaser. An understanding of how such bees will develop enables one to properly gauge his needs. These are: when to order, what size of package to order, and what age of bees to order.

A great many articles have appeared telling of individual experiences and often recording astounding results which have been secured from one or more packages in various parts of the country. The absence of details in such articles mars their scientific value. There has not been a great deal of careful work done along the line of recording observations on the development of package bees.

Observations have been made at the Kansas Experiment Station on the development of package bees and brood from May until frost. C. L. Farrar assisted in the Kansas experiments and while he was at Amherst continued his observations along this line, and W. J. Nolan of the United States Department of Agriculture not only made an extensive number of observations but prepared a bulletin on the development of package bees. The points brought out by these three investigations agreed in all essentials.

So many varying conditions will be encountered in carrying on such observations that, in order to make definite prognostications, it would be necessary to conduct experiments for a considerable length of time, and to use a large number of colonies. No two packages of the same weight will contain the same number of bees because of the varying amounts of honey present in their stomachs when they are weighed. There are so many factors beyond the control of man, such as the amounts of pollen and nectar available, and climatic conditions, that at the best an investigator can only hope to point out certain trends which would probably be substantiated if more extensive experiments were carried on.

Proper Size of Package Essential

Naturally the first thing to be considered is the desirable size of package. This will depend on whether it is intended to use the bees for starting new colonies, strengthening old ones, or for pollination purposes. Both Farrar and Nolan found that the two-pound packages developed faster proportionately than did any other. In the manuscript for his doctor's thesis, Farrar states: "The colony will develop slower in proportion to the total strength as it increases above 10,000 bees (about two pounds). The colony containing 10,000 bees may have from 80 to 100 per cent as many cells of sealed brood as it has bees. While in the colony containing 20,000 bees there may be 60 to 70 per cent, and the ratio tends to decrease 10 to 20 per cent for each succeeding increase of 10,000 bees. The available data indicate that where the colony contains less than 10,000, the percentage ratio decreases rather sharply."

Nolan made similar observations and

cited an instance of a comparison of the development of two packages. When these were received, one contained 8.81 times as many bees as did the other. At the end of twelve weeks, had the larger package developed as fast proportionately as did the smaller one, it would have had 253,975 bees. However, it had only one-seventh this number. Another package which had one-half as many bees as did the larger of these, actually had 5000 more bees at the end of twelve weeks than did the larger package. Nolan points out that in this case it would have been better to have used eight small packages rather than the one large one.

Although small packages may increase faster proportionately, the larger ones reach a working strength earlier in the season. This condition was found to exist in both Washington and Amherst. To be sure, startling stories have been told of the rapid development of package bees where there were extended honey flows. These are uncontrollable conditions. While these reports differ from those secured in Kansas, Washington, and Amherst, it seems reasonable to suppose that the observations made in the latter places will hold true for the greater part of this country.

Farrar found that under conditions similar to those of Amherst it required twelve weeks for a package of bees to develop sufficient strength to store surplus honey. Nolan found that a colony of 21,000 bees was strong enough for this purpose.

This answers the question of the proper sized package to order for the establishment of new colonies, and when these should be received. The beekeeper who knows the date of his main honey flow, can easily count back twelve weeks, and so place an order for his bees to arrive on that date.

Large Package Best for Pollination

The five-pound package of bees is the best size for pollination purposes. The arrival of the package should coincide with the blooming of the apple trees. Bees arriving at this time may be expected to begin work shortly after their installation.

The desired age of the bees will depend upon the purpose for which they are intended. To establish new colonies or to build up old ones, it is better to have as many bees as possible which have not yet reached the age of field bees. Such bees are better fitted for carrying on the duties of brood-rearing. To stimulate brood-rearing in package bees, young bees again are desirable. On the other hand, if it is intended to strengthen old colonies at the beginning of a honey flow or for pollination purposes then field bees are desirable, since they will begin at once.

Considerable difficulty has arisen from the balling of package queens soon after

A strong two-story colony from which bees can be shaken.

arrival. Some of our best beekeepers report that this can be avoided by keeping a syrup feeder in the hive until the colony is well established.

Ample Pollen Essential

If the combs have sufficient pollen, and the bees are given plenty of food they will rear a maximum of brood in spite of any weather conditions. According to Farrar, the bees consumed 3000 square inches of pollen in less than three weeks in late March and April. He adds that the amount of brood reared is proportionate to the amount of pollen available during brood-rearing. Weather conditions which tend to keep a normal colony of bees confined in a hive will result in an increase in egg-laying, and if this inclement weather continues long enough for these eggs to develop it will mean a corresponding increase in brood-rearing.

Five three-pound packages of bees arrived at the Kansas Experiment Station on April 30, 1923. One of them which did not develop normally was eliminated from the experiment. In order to follow the development of bees and brood throughout the season, 5000 bees were allowed to a pound. Of course, this number is not constant, but if anyone prefers to know the exact increase or decrease, he can easily change the figures from bees back into pounds. It was thought that multiplying the number of bees by a constant would make the result more comprehensible. The number of bees was determined by weighing each colony at three week intervals throughout the entire season. The amount of brood was determined by actual counts at each weighing.

On April 30, the packages contained on an average 14,000 bees, and, of course, no brood was present when these observations were begun. The first determination of bees and brood was made on May 26. A few extra days were allowed for the queen to resume a normal rate of egg-laying.

On this date the average number of bees had decreased from 14,000 to 10,200, and the average amount of brood in each hive was 13,000. This meant an average loss of 3,800 bees in each colony before any new bees had begun to appear.

The average length of life of a worker bee is estimated to be about six weeks. Since the time required for the development of brood is but three weeks, then in a normal colony the amount of brood should never exceed the number of bees at any time after the first three weeks of its existence.

The second determination was made on June 18, and the average number of bees in each colony was 13,250. The average amount of brood was 11,000.

Extra Work Means Heavy Mortality

On May 25, there was an average of 10,200 bees in each of the colonies and an average of 13,000 brood which should emerge before June 18. If the previous statement concerning the relation of bees and brood were true, then the condition found on May 25 would indicate that something was wrong. If the 13,000 brood present should be added to the 10,200 bees it will be seen that the number of bees which had been in the hive between May 25 and June 18 was 23,200. However, since the records show only 11,000 present, one concludes that in order to develop the second lot of brood and also do the necessary work around the hive, 12,000 bees had perished. If this number is added to the 3800 previously lost it makes a total of 16,000 bees, or 2000 more than were originally placed in the hive. This indicates that not only had all the package bees expired, but also 2000 of those bees which had emerged after the packages were introduced. Thus, if bees are forced to do extra heavy work they do not live even six weeks.

On July 11, the average number of bees was 18,000, and the average brood was

One method of filling packages, using funnel.

15,200. Had there been no mortality of bees in these hives the number would have been 24,250. The main honey flow at this station came between June 18 and July 11, and, although the bees were engaged in bringing in nectar and rearing brood, the discrepancy between the number of bees which might have been in the hives and the actual number present, was not so great as during the preceding three weeks. Bees which had been reared in the hive had more vitality and were able to do heavier work than did the original package bees. This is another argument in favor of young bees for colony development.

On August 2, each colony averaged 22,000 bees and 17,800 brood. The possible number of bees at this period was 33,200. This wider margin and consequent heavy loss of life was probably because the bees were gathering nectar at this time.

The Crucial Period

One of the most significant facts learned from this seasonal developmental study was that a crucial period exists between the second and third weeks after brood-rearing begins. At this time each colony had more brood than bees, and since the amount of brood reared depends upon the number of bees capable of carrying on this work, this decrease in workers will result in a slump in brood rearing at a time when it would be for the best interests of the colony to continue its brood-rearing at a constantly increasing rate.

There are three possible ways of overcoming this. One is to add one or more frames of emerging brood at the critical period (not always possible nor advisable); second, to order bees two or three weeks earlier (this probably would not mean an increase in young bees, as will be explained later); third, and probably most advisable, to introduce more package bees at this time.

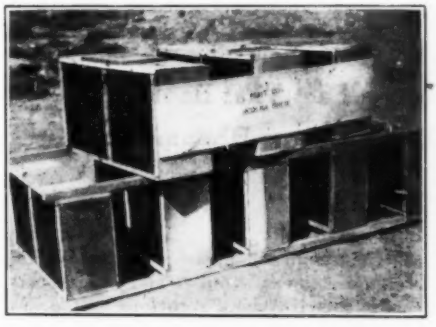
Morley Pettit, who by reason of wide experience in producing and shipping bees, is qualified to speak as an expert, writes me the following observations:

"In South Georgia, bees are largely broodless during December and January, the queen starting to lay towards the latter end of the month. This gives two and a half months of brood-rearing before shipping starts to any extent. As a rule, there is no surplus honey stored until along in April. The long breeding period during which no crop is harvested fills the hive with young bees which have done very little work. On the other hand, to be quite frank, I am not sure that all the wintered bees will have disappeared by the time shipping begins. I know it to be the practice of some of the largest shippers, including myself, to take nearly all the bees we can catch from the stronger colonies on the first round for packages, then on the second round, ten or twelve days later, 'pull them closer still,' and on the third round, do our best to leave nothing but the queens and drones on the brood of all colonies."

Bees ordered at this time to strengthen a package already introduced should therefore contain a maximum number of young bees which should tide the package over the critical period and prevent a slump in its brood-rearing curve.

Packages May Need a Boost

Mr. Pettit also offers these corroborative statements: "Even before the first of the brood is emerging the youngest of



Package bees, crated for shipment. The cleats hold the packages apart to provide ventilation.

the package bees have passed their prime as feeders of larvae. Now, I am not at all sure that it is best to give emerging brood to package bees at the time they are installed. It may be. But if such brood, known to be free from disease is available, I am sure it would be an excellent plan to give, say, one comb of it to each package about two weeks after it is installed. Please note that I said emerging brood that requires no feed, but will supply nurse bees at once.

"It will also give a package colony a splendid boost to give it one or two pounds of newly arrived package bees in from two to three weeks after it is installed. I would expect two-pound packages so treated to a third pound of bees to thrive much

better than three-pound packages sent at the early date."

Package bees require plenty of pollen early in the spring. Beekeepers ought to pay particular attention to this need.

To sum up some of the points which have been discussed, a two-pound package of bees is probably the most desirable size for this locality for the establishment of new colonies and should arrive from nine to twelve weeks before the honey flow. The longer period will apply to the localities which have earlier springs. The larger packages will produce a larger gross and consequently will become established colonies earlier than will the small ones. It is advisable to feed syrup upon introduction regardless of whether there is a honey flow on or not. Five-pound packages of bees are more desirable for pollination purposes. The slump in brood-rearing which occurs during the three weeks' period may to a large extent be overcome by proper manipulation.

Raynham Center, Massachusetts.

The Remedial Value of Stings

E. R. ROOT

(Continued from January Gleanings.)

Is It a Fact That Beekeepers Do Not Have Rheumatism?

The ampoules contain solutions of increasing concentration. The treatments commence with weak solutions and doses of increased potency are administered with the advantage that it is not necessary to apply many stings; one injection sometimes represents the amount of venom contained in approximately 30 or more stings. The modernized treatment makes it possible to use the venom the whole year around, in any place, at any time, and one is not dependent on procuring live bees, which, for city dwellers, is rather circumstantial and expensive. Hospital patients, too, can be treated through this innovation with the greatest comfort.

The Potency of Injectable Bee Venom

Dr. Beck remarks that the potency of the foreign injectable venom often varies and in such an instance it is usually inadequate. He thought that we are still far off from the time when we can claim that injectable bee venom is just as good as the original curative dose of our little friend, the bee. He believes the domestic production of an efficient and reliable injectable bee venom is an urgent desideratum, and he is hopeful and confident that this modern application of the age-old remedy will prove a great boon and blessing in our endeavor to check the progress and eventually quell the ravages of these world diseases.

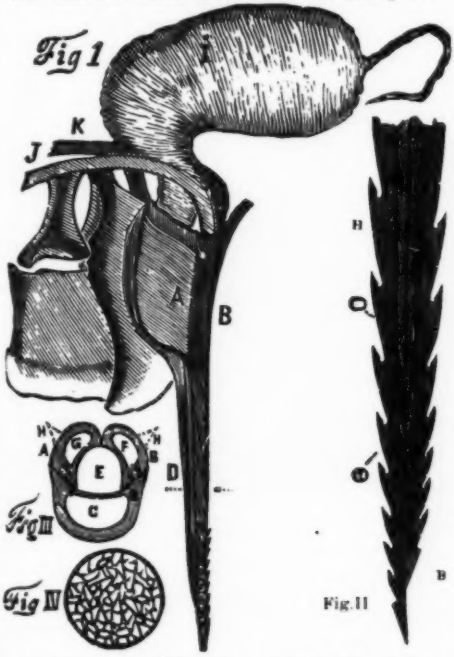
International authorities, like Prof. Perrin, of the Faculty of Nancy, France, highly praised the medicinal value of the venom. Perrin introduced 19 cured cases, during the Third International Congress of Rheumatism, in October, 1932, and stated that bee venom has a remote action, particularly on regions affected by rheumatism. He undertook, with great skepticism, his researches concerning the antirheumatic effect of the venom, but he is now convinced of success even in cases which have so far been refractory to all other medications.

Prof. Maurice Roch, of the Medical Faculty of Geneva, reported several cases in which excellent results had been obtained. Roch even tried the venom on himself for a knee ailment, after an amputation had been suggested. While no other remedy had helped him, the injec-

tions of bee venom effected a perfect cure.

Dr. Beck quotes many other authorities who use injectable venom at the present time. They all agree that it produces no harmful effects, improves the general condition, appetite and sleep, increases weight, and affords considerable relief from pain. He says:

In the April 28, 1934, issue of the British Medical Journal, an article appeared by Drs. Shipton and Burt, honorary physicians of the Devonshire Royal Hospital, stating that they had obtained excellent results in treating ar-



Bee-sting magnified. Fig. 1 shows the poison-sac of the sting. Fig. 2 shows the barbed spear of the sting itself. Fig. 3 is a tranverse section.

thritic and neuritic cases and fibrosities with a foreign injectable bee venom preparation but they complained that the Ministry of Health had stopped its importation because a license was required. The doctors thought it was very lamentable that the Ministry obstructs and prevents the use of a well recognized remedy which hospital patients, suffering from certain ailments, urgently require.

Dr. Herbert White, in connection with the above letter in the May 19th issue of the same journal, related one of his experiences, that of an agricultural laborer, crippled with arthritis, who was absolutely unable to work. He could not even grasp the handles of his wheelbarrow. Dr. White recommended bee stings. The patient went to a beekeeper, who applied, once a week, a dozen bee stings on each hand. In three months, completely cured, he was able to return to work. Dr. White thought that the manufacturing chemists ought to be able to put up bee venom adapted for treatments.

Dr. Beck, in anticipation of publishing his book, wished to ascertain how prevalent the belief is in the United States that bee stings have curative effects. He sent out a questionnaire to beekeepers, which was also published in the November, 1933, issue of Gleanings in Bee Culture. In it, he appealed to the beekeeping fraternity to assist him in the study of this interesting and important problem. He was mainly concerned with beekeepers' sensitivity and immunity to stings, the symptoms produced by the injuries, the favorite remedies which were universally employed, and above all, whether beekeepers ever acquired arthritic or rheumatic ailments during the pursuit of their occupation, and if they suffered from these maladies before taking up beekeeping, whether they were cured or subjected to recurrences. Dr. Beck received hundreds of replies, not only from almost every state of this Union, but from England, Canada, Nova Scotia, Hawaii, even from Australia, New Zealand and South Africa. Through these informative answers he obtained a mass of valuable and instructive material.

The author expressed surprise at the popularity of these treatments in the United States. He received many reports of remarkable results from beekeepers who had regular "roadside clinics" and cured patients of these ailments. Some reported that they had taken up beekeeping on account of obstinate arthritis, but after having been repeatedly stung, their condition not only gradually improved but they were finally cured. Dr. Beck quotes many replies, and some of them are certainly astonishing.

A veterinary surgeon (C. S. C.), of Rosedale, Indiana, reported that 20 years ago he contracted a very obstinate case of inflammatory articular rheumatism. He was bedfast for four weeks, had to be turned on a sheet. For five years he was compelled to go to bed every spring. He went to spas, took salicylates, and all other antirheumatic remedies, besides boiling, sweating and other "trimmings." Finally, he took up beekeeping and for the last fifteen years has had no rheumatism—that is, ever since he has kept bees. He gave credit to the bees for curing him, emphasizing that they didn't even charge him a cent for it.

E. B. K., of Lititz, Pennsylvania, wrote that about 38 years ago he contracted rheumatism, and the doctors tried everything, without success. After years of pain, he decided to try bees. He made the bees sting him from the right hip down. He received only 30 stings, and the pain left him. Ever since he has had no rheumatism. E. B. K. closed his letter with the remark, "I certainly do stand up high and shout very loud for bee stings."

L. K., of Indiana, wrote that he had two attacks of rheumatism before keeping bees, both of which had been severe enough to disable him for six weeks at a time. Since he has been keeping bees, he has had no return of the trouble.

J. W. P., of Puyallup, Washington, reported, concerning the curative effect of the venom, that he knew an educated German beekeeper, Mr. Stolley, who conducted a whole clinic in his apiary, and successfully cured patients of rheumatism. He mentioned the case of a county commissioner who suffered from this disease for years, trying several doctors without success. Finally, he had to resort to crutches. He was brought to the apiary each week. On each visit the stings were administered in increasing numbers. Before the summer was over, the man walked without crutches and went about his business as before. He said Stolley obtained many similar cures. J. W. P. added to his long and interesting report that he remembered reading in his earlier days of beekeeping a statement made by the late A. I. Root: "You'll very seldom find a beekeeper who is troubled with rheumatism." His experience is the same and he found the statement to be true. He can not recall a single case of a beekeeper who has had rheumatism.

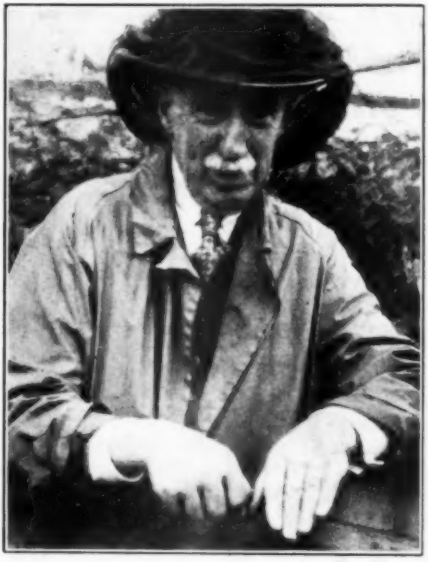
C. S. B., of Shelton, Washington, related that he had rheumatism when a small boy and the doctors who treated him told his mother he would be afflicted in later years. He remarked that as a person subject to rheumatism he can offer some valuable testimony along this line. He has handled bees for 50 years and always feels a pleasant glow after a sting and when the poison takes effect. He thought some people would laugh at this report but he is convinced that the stings benefit him. Last June he felt a "twang of rheumatics" in his left shoulder. He picked up a bee, pressed it against his arm, picked up another, pressed it into the hollow of his elbow until it had done its duty, then picked up another and pressed it just above the elbow. In three days, he felt no rheumatic symptoms. He stated that he is 78 years old, full of pep and vim and he fully believes that bee stings are a great help.

G. S. McR., Thief River Falls, Minnesota, reported that when he was a boy between the ages of 10 and 17 he had a number of attacks of rheumatism, one of them being so severe in the muscles of his chest that it affected his heart. He occasionally swooned away like dead. From 17 to 21 he worked with bees and had suffered no illness and no recurrence. During the winter of 1911, he worked in Fargo, North Dakota, in a creamery where it was wet and he was obliged to deliver milk without changing clothes. Next spring he had rheumatism in his legs so badly that he was unable to walk. During the summer he got over it. He has worked with bees every summer for the last 13 years and has been entirely free from pain. One fall he had slight pains in the shoulder. He went into the bee cellar, made a couple of bees sting him on the back of his hand, and in a day or two felt no more pain.

C. M. P., of Excelsior, Minnesota, wrote that he is 75 years old. He lived in Ohio until he was 23, where his father kept bees and he was often stung. From Ohio he moved to South Dakota, where he did not come in contact with bees. Before coming to Minnesota about 20 years ago, he contracted rheumatism, which at times was very acute. He took up beekeeping. His first experience was an accident with bees. He was covered with them and each one gave him a full dose of rheumatic cure. The response was immediate and the treatment was so effective that since that time he has had no rheumatism worth mentioning, though during the last ten years he has had only a few stings, as his son is looking after the bees.

C. W. S., of Oklahoma City, Oklahoma., had rheumatism of the shoulder and kidney trouble when 35 years of age. He took up beekeeping, and now he is 71 years old and entirely free from these ailments.

L. M. S., of Harrison, Ohio, was glad to have an opportunity to tell his personal experiences, which cover a period of 40 years. Some time ago, he gave a hive of bees to a boy neighbor who had inflammatory rheumatism. As the neighbor was "green," even with extra clothes on he received some "good" stings, which made him sick. He took some whiskey and went to bed. Later the boy remarked: "I'll be d— if I don't believe bee stings are good for rheumatism." He never felt any rheumatism since and today the same boy is a husky policeman in Chicago. L. M. S. also related a case of a man who worked for him six years ago in Montana. On a hot day the man took off his veil and was properly stung on his face and hands. Next spring he remarked that it was the first winter that he did not have rheumatism and he wondered why.



Not so painful as chronic rheumatism.

A. T. W., of Arcadia, Nebraska, answered the question about rheumatism: "Yes, that is why I began keeping bees. Had rheumatism so that I could hardly get around. About 20 years ago I read that bee stings were good for my affliction. I secured four colonies of mongrel bees, and 15 seconds later the stinging began. I believe these four colonies could have won the World War." By the next season he felt pain only occasionally and for the last 16 years has had no recurrence. He is 67 years old now, without a day of sickness, and attends to farm work and stock raising. A half-brother of his, a doctor in Kemmerer, Wyoming, told him he used "Apis" for rheumatism with success.

G. B. H., of Creston, Iowa, stated that before he took up beekeeping in 1917, he suffered from some form of rheumatism. After he worked with bees and received several stings, all traces of the trouble left him. In 1928 he sold his bees and for several years he continued to visit other beekeepers to do some work, just for fun, which, of course, resulted in several stings. From the year 1931 until the winter of 1932 he had no contact with bees and developed a painful attack of arthritis of the right elbow. The pain was so bad that he could lift his arm or grip an object only with difficulty. He was talking to a boy whom he had a few years ago interested in bees and asked him to get him some, the first warm days they were out. The boy brought him 10 bees in a queen cage. Before retiring that night he caused four bees to sting him over the elbow, leaving the stings in several minutes. By the next night,

two of the remaining bees were dead but he repeated the performance with four others as on the previous night. He noticed relief in 24 hours and in a few days all traces of pain were gone and no recurrence up to date (November, 1933).

H. M. M., of Boyertown, Pennsylvania, wrote: "I am working in my bee business for some 59 years. I am 80 years old, lean and tall, the same shape as my grandfather who always had rheumatism and several of my cousins died from it. I don't know what rheumatism is and I am sure bee stings will keep it from me. Dr. L. E. claims the same thing. Yes, bee stings prevent and cure rheumatism."

All these reports are very interesting and instructive. It proves how widespread the belief is that bee stings are efficacious for rheumatic ailments. Many beekeepers have told how often strangers visit them, asking for permission to go near the hives for "treatment." Some apiarists seem to be very proud of their "roadside" clinics.

Relative to the question about cancer, Dr. Beck received only one report, from H. R. C., of Honolulu, Hawaii, who related that a thin light-skinned Englishman, who owned the bees he is now operating, died from cancer, which the doctor thought was due to the tropical sun. Many other answers mention the fact that, according to the writers' knowledge, cancer is almost unknown among beekeepers.

The chapter in which the effects of bee sting injuries are discussed in a scientific manner is also extremely interesting, instructive, and informative. It will undoubtedly serve as a real textbook for physicians on the subject. To our knowledge, this is the first book ever written in any language which gives the chemistry of the venom and the pathology and clinical management of bee sting injuries. The author must have spent a tremendous amount of labor, time, and thought to amass this amazing wealth of material. He quotes innumerable cases from the world literature to illustrate the circumstances and conditions on which the effectiveness of the stings depends. The influence of topographical and constitutional conditions on bee stings is interesting reading matter, not only for medical men but it is invaluable for anybody who comes in contact with bees. The chapter on fatal injuries is full of surprises even to the oldest beemen.

In the second part of the volume, arthritic and rheumatoid conditions and their relationship to bee venom are discussed.

Valdosta Meeting Outstanding Success

M. J. DEYELL

Impressions Gathered During the Four-Day Convention

When two or more people listen to a sermon, or attend a circus, each person gets a different impression. Likewise, when a number of people attend a bee convention each person carries away impressions different than the others. Obviously it is difficult, if not impossible for any one person to give a comprehensive and adequate report on the Valdosta meeting because of the unusual size of the gathering, also the many conferences held on the side. Various phases of the meeting will doubtless appear in the bee journals, and so I shall simply attempt to bring to the readers of Gleanings my impressions of the meeting, also a few ideas brought out by the speakers I listened to. As I could not attend all of the sessions it will be impossible to give a detailed report of all the speeches. If, perchance, anyone on the program feels slighted, after reading this report, please forgive me.

Program Committee to be Complimented

There were over 40 speakers on the program. Perhaps the average person does not realize the enormity of the task that confronted the Program Committee. To arrange a four-day program, assigning topics to the various speakers, in order to maintain a proper balance throughout is no small undertaking. And yet, the machinery of the various organizations

meshed perfectly. The program moved along like clockwork. Mr. G. G. Puett of Hahira, Georgia, chairman of the Program Committee, together with his faithful committee members, are to be complimented

Monday forenoon was taken up largely with registrations, welcoming visitors, business meetings, roll call by states and appointment of committees.

Bee Shipping Problems

W. E. Harrell, Hayneville, Alabama, president of the Southern Beekeeping Conference, presided at the Monday afternoon session. Mr. Harrell stressed the importance of a better understanding between the shipper and the buyer, also called attention to the enormous growth of the package bee and queen business during recent years.

R. M. Pugh, of Regina, Saskatchewan, Canada, gave an interesting account of hauling 600 packages of bees in one truck from Alabama to Saskatchewan. The trip took between four and five days, through all kinds of weather. It was necessary to take the truck into a warm garage during a cold spell to enable the bees after dropping to the bottoms of the cages, to cluster again around the feeder cans. There was about 50 per cent loss in only eleven of the packages. While this method of transporting bees appears to have some advantages, it also has some disadvantages.

Mr. D. D. Stover, of Mayhew, Miss., gave an interesting paper on the "Responsibility for Loss in Transportation of Bees." He said that the Railway Express shipping facilities, while quite efficient, are not altogether satisfactory for the handling of bees. Mr. Stover is of the opinion that in some instances too many packages of bees are put in one car. He also thinks that all bad order claims should be referred to one attorney.

Mr. G. Sadler, of Atlanta, Ga., representing the express company, presented facts to show that the Railway Express is endeavoring to do everything in its power to transport bees satisfactorily, also to co-operate with the shippers. The shipping of bees is an important part of the Railway Express business.

Supersedure of Queens

A very interesting paper on this subject was given by H. C. Short, of Fitzpatrick, Alabama. In Mr. Short's opinion the early supersedure of queens may be due to using queens too old for breeding purposes. He thinks also that queens are frequently superseded when packages dwindle in strength after being installed, especially when weather conditions are unfavorable. Apparently the queens under these conditions are laying all the eggs they can be expected to lay with the amount of bees in the hives at that particular stage of colony development. The giving of an additional pound of bees to each hive at that critical time just before the first cycle of brood emerges might help matters. Mr. Short also pointed out that the conditions that prevail in a package of bees while it is building up to normal strength are not comparable with conditions that prevail in a normal colony, and that these seemingly abnormal conditions may account for the supersedure of queens in package bees.

Expansion of the Local Market

Mr. T. W. Burleson of Waxahachie, Texas, gave us some valuable pointers on selling honey. (1) Be sure to sell good honey; (2) Dress it up properly; (3) Advertise persistently and consistently; (4) Popularize honey in your vicinity by giving talks to schools, clubs, and other organizations.

The matter of honey clarification was presented by Dr. R. E. Lothrop, of Washington, D. C. Dr. Lothrop displayed a number of jars containing honey, some of which had been subjected to the new method of clarification. The honey was crystal clear. The remaining jars of honey processed in the ordinary way were not nearly so clear. Dr. Lothrop's article on honey clarification has appeared in the various bee journals recently.

Honey and Beeswax Prices

M. G. Dadant, business manager of the American Bee Journal, brought us an interesting resume on the past and present trend of wax and honey prices. Mr. Dadant says the demand for amber honey is increasing. Beeswax has ranged from 11 to 41 cents a pound in recent years. It would be a mistake, in Mr. Dadant's opinion, for the price of honey to go too high as this would have a tendency to reduce consumer demand.

Florida Beekeeping

The state of Florida, according to J. W. Barney, Bradenton, Florida, has some unusual beekeeping possibilities. The state is divided into three beekeeping regions. Mr. Barney regretted that the recent

freeze had somewhat dampened the enthusiasm of beekeepers as well as horticulturists. However, it takes more than a heavy frost to get Florida people down.

G. H. Cale, Editor of the American Bee Journal, discussed the value of the honeybee in pollination, illustrating his talk with slides. It was shown that orchards pollinated by bees do actually yield larger crops of fruit.

Popularizing Honey

R. H. Kelty, the very efficient president of the American Honey Institute, presided over the Tuesday afternoon session. Mr. Kelty reviewed briefly the history of the American Honey Institute, which had its beginning in 1928. Without a doubt this organization has done a wonderful piece of work in popularizing honey. It is one organization that beekeepers should support wholeheartedly.

Mrs. Jensen, Secretary of the Institute, gave a wonderfully inspiring talk. When she told us about the workings of the Institute, the amount of printed matter mailed out, articles on honey accepted by newspapers, including the Chicago Tribune, the number of colleges that receive the Institute honey bulletins, and the various other things that the Institute is doing to get more people to eat more honey, we began to realize, in a measure, at least, the value of the American Honey Institute to the beekeeping industry.

H. F. Wilson, Chairman of the Institute's Finance Committee, told of the increase from 300 to 900 members in a year, also the five-year pledge plan of financing the Institute in the future. The proposed budget for the coming four years will be presented in detail. In brief, the proposed budget for 1935 is $7500; for 1936, $8500; for 1937, $9500; and for 1938, $10,500.

Kellogg Company Booster of Honey

Beekeepers have a staunch friend in W. K. Kellogg, President of the Kellogg Company of Battle Creek, Michigan. Mary I. Barber of the Kellogg Company, held the audience spellbound as she told how Mr. Kellogg became interested in

Kellogg's Honey All-Bran Pudding—¼ cup butter, ⅔ cup honey, 1 egg (well beaten), ½ cup milk, ½ cup Kellogg's All-Bran, 1 cup flour, ½ teaspoon soda, ½ teaspoon salt, 1 cup seedless raisins. Cream butter and honey together. Add egg, milk and All-Bran. Sift dry ingredients and mix with the raisins. Add to first mixture. Combine thoroughly and put into greased mold; cover tightly, and steam for two hours. Serve with hard sauce. Note: Pudding may be steamed in a one-pound Kaffee Hag can. Cover with waxed paper before putting on the lid. Yield: 6 large servings.

honey many years ago, and has since been a honey advocate. Millions of packages of Kellogg's breakfast food are distributed yearly, each with the word "honey" appearing on it. The Kellogg Company also furnishes small posters and honey folders, free of charge, to beekeepers who ask for them. Miss Barber said that Mr. Kellogg is a very modest man and seldom if ever appears in public, but that he did consent at one time to make a talk at a beekeepers' meeting. Let's remember the Kellogg Company when we buy breakfast foods.

Boost American Honey Institute

As a fitting climax to the afternoon session, Mr. Fred W. Muth, of Cincinnati, Ohio, told of one South Dakota beekeeper who had received for his 1934 honey crop $3000 more than he would have received had it not been for the work of the Institute. It so happened that the beekeeper in question was present at the meeting to corroborate Mr. Muth's statement. Mr. Muth emphasized the fact that every dollar spent by a beekeeper in support of the Institute comes back to him many fold.

While the enthusiasm for the Institute was at its height, Mr. Muth made a direct appeal for cash to finance this worthy work. He called upon Jasper Knight of Alabama to pass the hat among the audience. Around $275 in cash and pledges were collected then and there.

Wednesday afternoon was taken up largely by committee meetings, reports of committees, and other business. However, a few well-known beekeepers not on the printed program made their appearance at that time. Mr. Robert Foster, bee inspector of Florida, gave an interesting and instructive talk on beekeeping throughout that state.

J. J. Wilder, of Waycross, Georgia, also spoke. Mr. Wilder, by reason of his long experience, knows practically every honey plant in Georgia and northern Florida. He related his experience in attending a national beekeepers' convention at Savannah, Georgia, in 1905.

The state of New York was well represented, with twenty-five beekeepers present. Mr. E. T. Cary, manager of A. I. Root Company of Syracuse, New York, was chosen spokesman for this splendid delegation. He told us something about beekeeping in his state.

New Era in Beekeeping

The first speaker Wednesday afternoon was Mr. E. R. Root, Senior Editor of Gleanings. Mr. Root was enthusiastic about the future of beekeeping. He mentioned the rapid spread of sweet clover, also the efficient work of the American Honey Institute as being two of the most important factors in the rapid development of beekeeping.

Then followed a talk by C. B. Gooderham, Canadian Apiculturist, Ottawa, Canada, who gave us a glimpse of Canadian beekeeping. Much of the Canadian honey is sold in granulated form in tins. The quality of the honey is maintained and improved by rigid inspection. The increase in price of packages and queens is limiting the demand somewhat. Canadian beekeepers are wintering more bees than they did a few years ago. A certain percentage of the queens received from the United States are unsatisfactory. Some investigational work has been done at that end of the route to try to determine the cause of early supersedure of queens, but no very definite conclusions have been reached as yet.

Disease Eradication

The Ohio bee inspector, C. A. Reese, formerly a bee inspector in Florida, as well as West Virginia, told of his experiences in dealing with American foulbrood and especially the method of securing funds, appropriated by the counties of the state, to help carry on inspection work. Mr. Reese's slogan is, "Burn diseased colonies at once."

This talk was followed by another on the need for Interstate Bee Disease Control by Dr. Montgomery, of the Plant Commission of Gainesville, Florida. Dr. Montgomery also believes in the burning method. In his opinion three things are needed, good laws, good inspectors, and adequate funds.

Drouth in Minnesota

Another very interesting talk was given by Dr. M. C. Tanquary, St. Paul, Minn., on the affect of the drouth on colony development. Dr. Tanquary showed a chart which gave a true picture of how a severe drouth retards colony development and secretion of nectar. It is indeed difficult for those outside the drouth area to have any correct conception of conditions that obtained in Minnesota this past spring.

Bees in Extension Program

Mr. Edwin J. Anderson, president of the Pennsylvania State Beekeepers' Association, also extension worker for that state, gave an unusually interesting talk

on beekeeping in connection with boy and girl club work. There are 33 such clubs with 319 members. These club members start colonies from package bees. Careful records are kept. The astounding fact brought out was that the per colony average for club members was 94 pounds of honey per colony, while the per colony average throughout the state was only 26 pounds.

Two-pound vs. Three-pound Package

It was indeed interesting to hear C. H. Gilbert, from the University of Wyoming, Laramie, Wyoming, tell of his experiences and experiments with two-pound packages, three-pound packages and wintered-over colonies. It appears from the work he has done that the two-pound package gives better results, other things being equal, than the three-pound package, also that package bees are more profitable than over-wintered colonies. The details of Mr. Gilbert's experiments will be given in a future issue of Gleanings.

Marketing Agreement and License

Prof. McDrew's talk on this subject is given in this issue on page 77.

There then followed a talk by a man who has been intimately in touch with the interests of beekeepers throughout the country, a man who has done much for beekeeping, none other than James I. Hambleton, Washington, D. C., "Jim" as many of the beekeepers call him. His remarks were few but to the point. Hr. Hambleton felt that the conference was very much worthwhile. He was glad to know that bee shippers are interested in the sale of honey, even though they may not be producing it.

The closing talk was given by our good friend, Prof. Robinson, Auburn, Alabama. His report on the volume of bee and queen business showed that 233,702 queens and 103,339 packages, or approximately $347,000 worth of bees and queens were shipped in 1934. Prof. Robinson said that the bee and queen shippers could help him by getting their reports in promptly.

1935 Southern Conference Officers

The president of the Southern Beekeepers' State Federation, H. E. Harrell, appointed as a nominating committee, E. G. LeStourgeon of Texas, J. T. Haertel of Alabama, E. S. Prevost of South Carolina, Julian Allison of Tennessee, and R. E. Foster of Florida. President Harrell asked to be relieved of the presidency for the coming year, because of being connected with the Central Control Committee under the marketing agreement for package bees. E. G. LeStourgeon, after meeting with his committee, recommended the following officers for 1935, who were unanimously elected: President, George W. Bohne, Luling, La.; Vice President, Julian Allison, Nashville, Tenn.; Secretary, G. G. Puett, Hahira, Ga. Vice Presidents for each state and members of the executive committee: Georgia, H. F. York; Louisiana, W. E. Anderson; Alabama, H. C. Short; Florida, L. M. Lewis; South Carolina, E. S. Prevost; Mississippi, D. D. Stover; Texas, T. W. Burleson; Virginia, T. C. Asher.

The representatives from North Carolina, Arkansas, Oklahoma, Kansas, Missouri, and Arizona, did not turn in their nominations for vice presidents, but they will doubtless do so in the near future.

The League Is Needed

J. W. Newton, President of the American Honey Producers' League, called a conference at Ashley Hotel to consider ways and means of stimulating interest in the League during the coming year. Those present were: J. W. Newton, E. G. LeStourgeon, E. R. Root, M. G. Dadant, M. J. Deyell, L. C. Dadant and W. E. Anderson. The editors of the three bee journals agreed to do all in their power to boost the League during the coming year. The League is needed to promote the interests of the beekeeping industry.

New Officers of Institute and League

The nominating committee for the American Honey Institute and the American Honey Producers' League deemed it advisable to recommend the re-election of the present officers of both bodies. This recommendation was upheld. It does seem impracticable to appoint new officers at a time when the old officers are becoming well acquainted with their work.

There were a number of important resolutions and recommendations which will appear in a later issue. The joint conference of the three beekeeping organizations was so outstandingly successful that it was agreed to continue the policy of meeting at intervals in the future. It seems that San Antonio, Texas, made a successful bid for the 1936 meeting. The Southern States Federation is to meet at Nashville, Tennessee, the first Monday in December, 1935.

February Honey Publicity

DAVID I. DAY

Resourceful Methods of Advertising Locally the Labors of the Busy Bees

A few years ago in a prosperous German Catholic community in Indiana, the writer observed that there was considerable activity in the little village. We learned that every one was in preparation for a special church service in observation of Candlemas Day.

There was another attraction a few miles away--a typical public sale. In front of the village postoffice was a young lady with a most attractive honey stand, a sort of one-day honey sale. She was very successful and stated that her father, a veteran beekeeper, made a special effort to sell honey, both comb and extracted, about the first of February. She said: "There are quite a few holidays, religious and patriotic, this month, and many special dinners and visiting, so by getting busy the first of the month, on or about Candlemas Day, you provide housewives with honey. Nearly every one buys honey here pretty well through the year."

Having been reared in a community where Candlemas Day observance is unknown, we made some inquiries. It seems that about one thousand years before Columbus discovered America in the year 1492, the Roman Catholic Church instituted this church feast. So we felt away behind with our news!

The feast is in commemoration of the presentation of Christ in the temple and the purification of Mary. It falls on February 2, and is marked by lighted candles carried in processions. It is said that the same sort of feast is observed both by the Anglican and Lutheran churches.

A Honey Window on February 12

A great many beekeepers have arrangements with local grocers to handle their honey. How fast the product moves often depends upon the interest and selling stress laid upon honey by the grocer and his clerks. In some cases, they display honey prominently, suggest it to housewives, and even arrange window displays to advertise it. Other grocers neglect honey and with them, it naturally never sells very well.

In central Illinois, the people are extremely conscious of the greatness of Abraham Lincoln. He is considered as the great gift of Illinois to the nation. As would be perfectly natural, under the circumstances, the birthday of Lincoln on February 12, is observed in those counties in every conceivable way and the American flag flies in the railsplitter's memory.

We paused in front of a village grocery on Lincoln's birthday, in a little market town in the valley of the Sangamon River. That grocer had a real honey window. From somewhere recently had come a hollow cross-section of a bee tree, and it was in the window with a suitable card. The card read: "When Abe Lincoln was a boy, all the honey he ate came from bee trees in the woods near his pioneer home. Now, under modern beekeeping methods, our customers buy better honey in modern attractive containers." A big flag-draped photograph of President Lincoln was in the window. The background of the window scene was good Illinois clover honey in glass containers.

The thought came to mind at that moment that such attractive store windows might be arranged for every day in the year in almost any town or village and the consumption of honey would surely be increased.

A Valentine Day Honey Sale

A report comes of three Kentucky beekeepers who had the eight groceries in a small town stage a Valentine honey sale, on Valentine Day, and on two or three additional days. The grocers carried honey advertising in their regular weekly newspaper space and the beekeepers had printed announcements distributed to homes, placed in automobiles, and given out personally.

That was a year or two ago, and while considerable honey was sold, some introduced into homes for the first time, the best benefit, possibly, was the fact that all these stores have carried honey as a regular shelf item ever since. An understanding and friendship was developed between the beekeepers and the business men in town which has proven to be beneficial to both groups.

One of the good things done by the beekeepers then was to provide the grocers with special show cards, painted by a local sign painter. One of the best of these read: "You mailed some sweet valentines. But none so sweet and wholesome as good old Kentucky clover honey. Today is Valentine Honey Sale Day—buy a supply here of nature's own sweet!"

100 Washington Snapshots

In one Ohio locality in 1932, during the George Washington Bi-centennial Celebration throughout the United States, the Masonic lodges of an entire county staged a joint celebration on the evening of February 22, Washington's birthday. The special stress, of course, was placed upon Washington's career as a Freemason, including service as Grand Master of Virginia.

A former teacher keeps bees on a modest scale in that county and was invited to speak on his impression of a trip he had made to Washington, D. C., and surrounding historical country. In addition, as a member of the order, he donated honey for use at the banquet following the program.

"I am not much of an orator," he said later, "but I had 100 kodak pictures taken in the city of Washington, various Masonic buildings, the Washington Masonic Memorial at Alexandria, at Mt. Vernon, and even in the vicinity of Fredericksburg, where Washington grew up and where his mother lived and died. These snapshots made a great hit and I conversed with a great many men I never had met before. Now—the unexpected thing was that many of these fellows dropped in to buy honey and get advice on trips they were planning around Washington. Several steady customers are still coming. I keep sold out of honey—all locally and at a very satisfactory price."

This goes to show that helping out in a good cause, however unselfishly it may be done, is often the best possible publicity for a man or his business in February—and every month in the year, for that matter.

Chrisney, Indiana.

American Honey Institute Adopts a 5-Year Plan

At the Valdosta meeting the Board of Directors of the American Honey Institute voted to make the 5-year pledge plan a permanent part of the Institute finance program. As a result of the discussion in the bee journals, more than 60 beekeepers have already sent in their pledges for 5 years. The membership of the American Honey Institute has grown from less than 350 in 1933 to approximately 1000 in 1934. A strenuous effort will be made to increase the number of members to 1500, or more, during 1935.

PROPOSED BUDGET OF AMERICAN HONEY INSTITUTE.

Estimated receipts—	1935	1936	1937	1938
Contributing members	$4500.00	$5000.00	$5500.00	$6000.00
Supporting members	2000.00	2500.00	2750.00	3000.00
Publishing	300.00	500.00	750.00	1000.00
Permanent Foundation	500.00	500.00	500.00	500.00
	$7500.00	$8500.00	$9500.00	$10,500.00
Estimated expenditures—				
Salaries:				
Secretary-Treasurer	2600.00	2800.00	2800.00	3000.00
Assistant Secretary-Treasurer	1495.00	1700.00	1800.00	2000.00
One full-time clerk		930.00	1000.00	1200.00
One one-half time clerk	420.00		480.00	480.00
Office rent	240.00	240.00	240.00	360.00
Telephone and telegraph	25.00	35.00	40.00	50.00
Stationery	50.00	75.00	75.00	100.00
Office supplies	200.00	100.00	150.00	150.00
Stamps and express	350.00	350.00	350.00	350.00
Mimeographing	50.00	50.00	50.00	100.00
Kitchen expense	100.00	100.00	100.00	110.00
Entertainment	50.00	50.00	100.00	100.00
Advertising	50.00	50.00	100.00	100.00
Travel	300.00	400.00	500.00	500.00
Publishing	500.00	700.00	900.00	1200.00
Furniture and fixtures	150.00	100.00	100.00	100.00
Finance committee	120.00	120.00	120.00	
Emergency account	300.00	200.00	95.00	100.00
Permanent Foundation	500.00	500.00	500.00	500.00
	$7500.00	$8500.00	$9500.00	$10,500.00

The above suggested budgets for 1936-1938 are made on the basis of a ten-cent per ton average of the entire crop for all states. While we may not be able to accomplish the final result in any year, we can at least have a definite goal to work toward. Increased honey publicity will be made possible by larger quota collections. Budget approved December 18, 1934.

From the Field of Experience

LET'S PRODUCE MORE HONEY

But We Must Find New Uses For It and Ask Fair Prices

At a recent gathering of some of the leading beekeepers of western New York there was a discussion as to just how much beekeepers would gain if they were organized as some of the writers would like them to be. After considerable discussion the question was, how much they would lose if they were organized and under the A. A. A. code.

Very few beekeepers realize that to set prices on honey would ruin the beekeeping industry. Does the advocate of high prices ever stop to think that the big commercial users of honey control the demand for honey, and that the only reason for their using honey is that it can be bought for about the same price as granulated sugar is selling for? Now, let honey go up too high in price and they will quit using it, and it would take a lot of persuasion to get them started again. Right now they are using all the surplus honey they can get. This surplus honey is the kind that gluts the market if not disposed of in this manner. Everybody knows the condition of the market when half the beekeepers have honey to carry over.

One trouble with the beekeeping industry is that 90 per cent of the producers of honey are not equipped to produce it, and therefore do not know what it costs per pound to produce. This holds good with too great a number of big producers. Now let one of these producers try to sell his crop of honey and what does he know about it anyway? Does he know what would be a fair price for his product? He could only guess and if he hit it right, all well and good. If not, he either did not sell or sold too cheaply. The only way to get around this situation is to educate the beekeeper or rather for the beekeeper to educate himself in his business. This will solve 90 per cent of his troubles.

But you will ask, where and how can beekeepers get the education? Well, we have the bee journals, the associations, county and state and the agricultural colleges. Read the journals, go to the meetings and go to the short courses in beekeeping, then go to it and produce more honey—ten times as much as is now produced, but not as we now produce it. Find out what the big users of honey want and how they want it. When the beekeepers are sure they have enough honey to supply a certain trade, then go after it. You will have to convince the trade that you have enough honey to supply them from year to year, otherwise you will never get to first base getting orders and the honey prospects will keep right on using sugar, and more sugar.

Brewers alone could use up all the honey produced in the United States in six months. Only about 1 per cent of them use honey now. Why? Because they could not get enough honey to supply their wants and would have to change their formula when the honey was gone and would never start using it again.

Sugar has become very popular as a sweetener because it has not varied much in price, especially in peace times. Honey will have to follow sugar in price, and as long as we produce enough honey to supply the demand at these prices we will have a market for it. The writer contends that it doesn't cost any more to produce honey than it does to produce granulated sugar. Let us produce more honey, and find new uses for it. Let us develop the markets we now have and keep them supplied with honey at a fair price.—John N. DeMuth, Pembroke, New York.

HONEY IN THE BAKESHOP

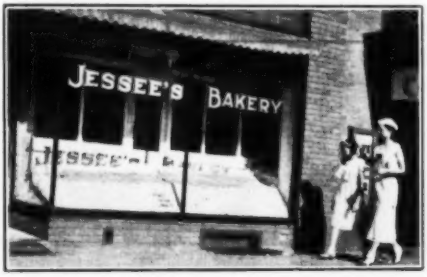
Glimpses Revealing How and Why Honey Is So Satisfactory

That bakeries have used huge quantities of honey for several years most of us know. But it's lots of fun to take a peek behind the scenes, so to speak, and know just how and why the bakers use our product.

A tour through Jesse's Bakery reveals first the spacious skylighted room where numerous bakers, clad in immaculate white uniforms are busy at long tables. We see huge refrigerators, dry mixers, weighers, cutters and molders all controlled by electricity. Then we step into a

large room containing electrically controlled bread mixers chilled to proper temperatures by means of ice. And turning, we see huge vats and racks installed for breads, the temperatures held to an exact degree. In the next room we are greeted by blasts of heat from immense ovens, bricklined, controlled and heated by gas. These rooms are the home of honey baked goods.

Five large trucks back up to the doors to receive their loads of deliciously smelling goods, and the days go on. These swift messengers travel hundreds of miles each day to supply honey goodies to thousands



Home of honey-baked goods.

of people who have become accustomed to their delightful flavor and goodness.

For the past ten years Jesses' have used our honey chiefly in cookies. More recipes now call for honey, and Floyd Bahn, head baker, tells me that several new ones are to be tried out soon. Just recently they have begun using honey in a pan dressing for pecan rolls which they like very much. Brown sugar alone was used but was found to burn too easily. In using honey with it this undesirable feature is eliminated and the honey produces a high gloss these bakers like very much. Large batches are mixed and kept on hand in the refrigerators. Mr. Bahn gave me their recipe:

Pan Dressing—4½ pounds cane sugar, 4½ pounds brown sugar, 2 pounds 5 ounces Vrean (a vegetable shortening), 1 pound butter, 2½ ounces salt, 1 pint honey, 4 ounces flour, ½ ounce mapeline.

Mr. Bahn estimated the use of honey for this one purpose may be five gallons a month. The more added uses the greater consumption of honey!

To the bakers honey has no disadvantages. Its very stickiness, which is a source of considerable annoyance to most housewives, is regarded by bakers as a most desirable feature. It holds ingredients together and is excellent in toppings and fillings for jelly rolls because of this property.

Jesses', as well as other bakers who use our honey, prefer light or milder-flavored honey rather than the dark strongly-flavored honey.

Another baker, a chemist in a city bakery using our honey, claims that he prefers using honey instead of malt because it combines more readily with other ingredients.

So, if your bakers are not now using honey in their products perhaps you may be able to induce them to start. In spite of recipes and magazines urging them to make use of honey in many cases it remains up to the beekeepers to interest them sufficiently to make a trial.—Mrs. Benj. Nielsen, Aurora, Nebraska.

INCIDENTS IN INTRODUCING

Introduction Not So Difficult if Conditions Are Right

It has been my experience that it is more the "mood" or condition of the bees that counts in introducing queens than any set method. While, of course, the limited number of experiences I have had may be misleading—the exceptions rather than the rule—they do tend to show that bees will not ball a queen when they are "feeling right."

Every experienced beekeeper knows the ease with which a laying queen may be introduced to a colony progressed far enough in its own rearing operations to have all queen cells sealed. The queen may be simply dropped on a comb after all cells are destroyed.

But my experience went further than this. On several colonies, five, to be exact, this operation was performed when only one or two cells were finished. Four of these cases were supersedure attempts after the close of the honey flow. I chose a day when the weather was good. The bees were of a quiet, though not especially mild, disposition.

Finally, rather late in the fall, I came upon a colony where the queen (though introduced only a month earlier) had obviously been failing for some time. The little brood present was very scattered and the queen herself was small and poor

looking. A nucleus stood close by. I killed the old queen, dropped her among the combs, and without closing the hive, secured the queen from the nucleus. I placed her on a comb among the bees, watched her a moment, then closed the hive. On last sight the bees were surrounding her in the characteristic little circle one so often sees. I had no fear for her safety and my optimism was justified when I found her laying well about four days later.

In all these cases (as well as the dozen other queens I gave colonies in like manner when all cells were sealed) I carefully watched the behavior of the bees. The condition I desired is hard to explain, but might be described as a drowsy or sluggish movement of the colony. In all cases (the one described above also) one or more sealed queen cells were present and often seven or eight unsealed. The bees seemed to be expecting a queen soon from the cells, so made no opposition to the one given them. The presence or absence of a honey flow appeared not to have a great deal of effect.

These cases were all with laying queens. Of course, no such success could be expected with those from the mailing cage. I had no failure among about seventeen cases which were mostly introduced in the way described. It would be interesting to know if others have had similar experiences.—C. M. Isaacson, Middle River, Minnesota.

THE QUEEN'S SUBJECTS

A Careful Study of Bee Behavior Makes Beekeeping More Interesting

Since all the manipulations of the modern beekeepers are based on careful ob-

servations of the behavior of the bees when left to themselves, anything with a real newsy flavor, which tends to throw fresh light on the ways of these engaging little beings, is likely to be eagerly read.

At any rate, I found mighty good reading in C. M. Isaacson's story, in the October number of Gleanings, telling how the bees "took pity on a queen," which, instead of being formally introduced, had been left outside on the grass by oversight, with neither shade nor food for three days, feeding and sheltering her until the beekeeper came to the rescue and performed the required ceremony.

It is, of course, well known that bees will often attach themselves to a strange queen outside the hive, when under the influence of the swarming impulse, and they will, when queenless, also readily accept a new queen within the hive, if she is given on a frame, among her own bees, though there may be serious trouble if another frame of strange bees is given at the same time.

I make it a practice to keep such of my deposed queens as are not positive failures in single-story hives, to serve as reserves, and to supply brood for speeding-up medium strength colonies. The other day, on lifting the cover of one of these hives, I found that the colony had been going ahead quicker than I expected and had built a couple of extra combs on the roof. On putting down the cover in front of the hive, so as to remove these combs, I saw the queen on the cover, and picking her up I put her down near the edge of the top of the hive and let her run in. The bees, however, at once balled her, and I had to put her into a cage for introduction as though she had been a complete stranger. I appear to have so exasperated those bees that they could not discrimi-

nate between their queen and their keeper.

It is said that any undue disturbance of a colony, whether produced by some external agent, or even by the erratic movements of a nervous queen, may cause bees to ball their queen. Bearing this in mind, it was a long time before I worked up sufficient audacity to make the first attempt at clipping my queens. This year, however, I determined to put the stopper on this particular class of procrastination, and after clipping the wings and a leg or two off an unfortunate drone, I boldly approached one of the previous season's queens, armed with a pair of folding nail scissors.

It was some time since I had read the instructions in the A B C and X Y Z of Bee Culture on how to clip a queen bee, and at the critical juncture all that I could remember of the matter was, that the queen should not on any account be grasped by the abdomen, but by the thorax, which is reasonably hard and proof against injury. Well, after two or three false starts I got the queen by the head and thorax, clipped off her wings, and put her back on her comb. The peculiar behavior of that queen for the remainder of the afternoon caused me much anxiety, but despite the most erratic movements, inclusive of much misplaced egg laying, this queen's subjects seemed to notice nothing out of the ordinary, and after a day or two the queen herself seemed to forget the incident and settled down to business as usual.—A. L. Bartlett, Trinity P. O., Jamaica, B. W. I.

NO DEPRESSION IN THIS APIARY

Bees, in Experimental Apiary, Fed As Much Syrup as They Will Take

It might not appear plain to some why two-story eight-frame hives with only twelve combs, no cover, and no packing except some rags and one wrapping of paper should weigh so heavy—the lowest, 86 pounds, and highest, 118 pounds, with a total of 1125 pounds for the twelve hives.

An empty hive fitted as these are with bottom board, 12 empty frames, rag packing, and wrapped, weighs around 38 pounds; so that the bees and honey represent considerable weight in each case.

I did not extract any honey from the frames. As soon as the honey flow was over, and when it was yet warm enough for them to store and seal sugar syrup, each hive was fed all they would take and store, with wide spacing of the frames and the combs are thick and fat. About 200 pounds of cane sugar in the form of syrup was fed to the twelve hives. I was liberal with the tartaric acid—a teaspoonful to each ten pounds of sugar, so that this syrup positively will not granulate. They don't object to the syrup if it tastes a bit like lemonade. There is no depression in this apiary.

Each hive was weighed and marked after the packing was completed. Before unpacking in the spring we will weigh them again to determine exactly how much stores each colony consumed.—Miles E. Miller, Kinderhook, N. Y.

Mr. Miller's experimental porch apiary with the bees fed and packed ready for cold weather.

[This is the porch apiary described and pictured on pages 673-675 of November, 1934, Gleanings.]

SPINSTER JANE SAYS—

January began by handing us out a fine sample of sub-zero weather. Now we have had four delightfully mild days, by way of variety. No prospects, though, of bees mistaking this for spring, and flying.

Winter is the natural time for planning ahead, especially when the year is brand new. I have always advocated flowers and bees going together, because they naturally belong. Men, matter-of-fact creatures that they are, consider plants and flowers a nuisance. There are exceptions, but in this case the exception does not prove the rule. In my plans for the coming year will be the growing of gladioli.

Up stairs, carefully stored within two separate heavy paper cartons, are my bulbs—nearly a peck of them, so unless I weaken, my dream will materialize.

Will someone tell me, do bees get honey from these flowers? Are their tongues long enough? There is nectar in them, I know. Just prove it for yourself. Pull out a floweret and suck the end of it. You will find it sweet as the end of a clover petal. Bees linger long and often in these flowers, and I believe are after honey, rather than pollen. Now what could be more beautiful than a plot of these flowers in full bloom, with bees humming among them! One can almost forget their lack of fragrance, and perhaps, some day, some new Burbank may succeed in giving these gorgeous blossoms even that.

Near my hives, shading some of them, are wild plum trees. Several years ago the fruit was badly spotted, and a lady near stated they had been "stung" by my bees. I doubted this, but was too ignorant to deny it. For once I could not put up an argument. Now I am glad it has been proved false. It was only a case of giving a dog a bad name. Poor little insects! And now even their stings promote wonderful cures!

I am minded to try this out, as one of my neighbors has badly crippled hands and feet. I am just wondering if she could even run if I sicced the bees on her. Would she ever forgive me if they worked a miraculous cure, or would she hold it against me? If I had more bees I might not mind, but what a waste of good bees should it fail! Just the same, I shall suggest it. And if it succeeded, there is a most lucrative source of income for the beekeeper with courage enough to travel with his bees, treating patients. He could visit large centers, advertise miraculous cures, keeping the bees out of sight, treat patients privately in a sound-proof, locked-and-barred room, first swearing them to secrecy. And oh! What fun to get back at some of these touchy, grouchy males, with their "superiority complex." I could almost wish rheumatism upon them just for the chance.

Why not try this treatment on cancerous growths, to see how it will act? Some day, just such a simple thing as that may do the trick. That venom when of such medicinal value, might work a miracle. Here's a tip to some aspiring doctor, and the one who succeeds in finding a cure for that dread disease will benefit mankind immeasurably, win undying fame, and—if a Canadian—be assured of knighthood.

When Honey Boy started keeping bees, he lost all by wintering them in our damp cellar. Every time I went into the cellar for vegetables, I put my ear to the hives to see if all went well inside. Their contented hum grew fainter, in all but one, ceased entirely.

I took a hand, too, in Honey Boy's first honey harvest, donning a pair of men's overalls with good zipper fastenings, a wide straw hat, bee veil, well and securely tied, puttees about the flapping turned-up overalls, stockings upon my hands. I wasn't proud of my appearance. I was short and round, the overalls built for a tall person. What did one of the youngsters do but sneak around and snap my picture to my great dismay and embarrassment.

The bee-stings that day on Honey Boy's sleeves and felt hat, would have supplied venom enough to cure many rheumatic sufferers.

Shucks! I must be getting old to be reminiscing, this way! Before closing let me just say, should some intelligent medical man take my tip in trying out bee-sting venom on cancer, and find it successful, won't he please name Spinster Jane as an accessory-after-the-fact?—Spinster Jane.

Editorials

Ohio's Unique Foulbrood Law

Possibly some of our readers in going over the editorial, page 36, last issue, did not grasp the point that Ohio has a feature in her foulbrood law that other states should adopt; namely, that section which permits the appropriation of funds by county commissioners for the purpose of foulbrood eradication in their respective counties.

One county in Ohio that was almost rotten with foulbrood, appropriated $1000, and has been giving a like sum for two years. The county is now practically clean of disease. Other counties in Ohio have, through these special appropriations, done as good work. A local beeman under the supervision of State Bee Inspector Reese is appointed by the commissioners to do work only in the county under their jurisdiction.

The plan has worked so well in Ohio that other states should adopt this feature. State legislatures will now be in session and beekeepers should see their representatives and senators at once. First send to Chas. A. Reese, State Bee Inspector, Columbus, Ohio, and get a copy of the Ohio state law which makes it permissible for county commissioners to appropriate funds for their respective counties for the eradication of bee diseases. Such a law adopted in every state where there is a foulbrood law will make the clean-up much more effective. What Ohio has done other states can and should do.

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Boy and Girl Bee Clubs

One of the bright spots on the horizon of beekeeping today is the 4-H boy and girl bee club work being carried on so efficiently in the various states. These young people undertake beekeeping enthusiastically and intelligently. They want to know the "why" as well as the "how" of beekeeping. We are not surprised that the per colony average of honey produced by the boy and girl clubs of Pennsylvania last season was so remarkable—94 pounds per colony—while the per colony average throughout the state was 26 pounds.

This may not be a fair comparison of per colony yields, and it is no reflection on the rank and file of Pennsylvania beekeepers, but it does show what 4-H boys and girls can do in beekeeping under intelligent supervision. The beekeeping industry needs just such work. Let's give it the help and encouragement it rightfully deserves.

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Minimum Price Schedule of Bee Agreement Revised

An amendment to the marketing agreement and license for shippers of package bees and queens was signed and made effective January 18 by Secretary of Agriculture Henry A. Wallace. (See page 117.)

The amendment provides a revised schedule of minimum prices under which sales to dealers may be made at a discount of 15 per cent under prices to consumers. It defines the terms consumer, dealer, and person, and also specifies that nuclei shall be priced the same as packaged bees.

The amendment was suggested by the control committee supervising the operation of the Bee Shippers Marketing Agreement, and received the approval of the representative shipper organizations and several organizations of buyers of packaged bees and queens.

Copies of the amendment may be secured at the office of the Chief Hearing Clerk, Department of Agriculture, Washington, D. C.

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Figures Don't Lie

According to estimates submitted by the Bureau of Agricultural Economics of the United States Department of Agriculture, a five-year average production of honey in the United States, from 1929 to 1933, was 172,226,870 pounds. It may be difficult for most of us to get a men-

tal picture, or even a meager conception of this amount of honey. On the basis of 36,000 pounds to a minimum carload of honey, this nine-digit number of pounds would make 4784 carloads, or a single trainload of honey approximately 36 miles long. If this amount of honey were put into one-pound jars and stood, side by side, close together in a row, this row of jars would extend over 8157 miles, or about one-third of the distance around the earth.

Even this seemingly enormous amount of honey, 172,226,870 pounds would supply only a little over a pound for each of the (approximately) 125,000,000 people in the United States. If all the people in the country could be induced to eat honey, nature's oldest and safest sweet, regularly, instead of some of the sugar that is now consumed (over 100 pounds per capita), this seemingly big pile of honey would disappear in a week or ten days. It requires no wide stretch of the imagination to foresee what will happen to the beekeeping industry when the public actually begins to consume honey.

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Using Honey in Candies

Unfortunately there are some makers of candies who attempted to use the good name of honey on their product but used in fact very little honey. The National Food and Drug Administration has ruled that a honey candy shall use enough of honey so that the product shall carry the flavor of honey. For this reason some candies flashing the name honey have disappeared from the market, and rightly so, because the amount of honey used was too small.

It should be frankly stated that it is not an easy matter to make a really good honey candy using enough honey to meet federal requirements, without its becoming sticky on standing, especially in hot weather. Honey contains one sugar, levulose, that is hygroscopic, that is, it draws moisture from the air. A candy containing honey unless provision is made to prevent it, will become sticky and unsalable on standing. This very quality is invaluable in cakes, cookies and breads, because it keeps them moist. There are two ways of overcoming this in candy: First, by the use of a combination of lactose or a milk sugar, and, second, by the use of some other sugar such as corn or cane sugar, skim milk or whole milk powder or even commercial glucose.

There is another difficulty in the use of honey for candy making. Honey is seldom uniform in its proportions of its two principal sugars, levulose and dextrose. It varies again in its percentages, though small, of its minerals and of its colloids, of its water content and its degree of inversion. In general its low caramelization point must be taken into consideration. This is due to the varying content of levulose and colloids.

In preparing or trying out a formula for the making of a certain candy, it is highly important to use one source of honey of best quality, running not less than 12 pounds to the gallon. The colloids in honey, while the proportions are relatively small, have a pronounced bearing on the ability of the honey to undergo heat. For example, sweet clover or alfalfa will stand more heat than orange or mountain sage honey.

Again, in some honeys, the proportion of levulose is about twice that of dextrose. Most honeys will have slightly more of levulose than dextrose. Usually one source of honey from a given locality will have the percentages of levulose, dextrose and of the colloids nearly constant. For this reason it is always safer to procure as nearly as possible the same source of honey for each batch of candy.

It is because of this variability in honey that a formula or recipe that will work well with one honey or one person may not give satisfactory results with a honey of a different source. Taking it all in all, one may have to cut and try with any recipe where another sugar is used before he can get a candy that is satisfactory and that will not become sticky in warm weather.

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Importance of the American Honey Producers' League

In our scramble of enthusiasm to support the American Honey Institute, we have almost forgotten the American Honey Producers' League, without whose aid the Institute would suffer in more ways than one. The primary purpose of the Institute is educational. It has done a vast deal of good

in getting the general public honey minded and at a minimum of expense. The primary purpose of the League is protective and legislative. It was the League that stopped, with the support of the bee journals, legislation in Congress that would have permitted glucose or corn sugar in honey without a declaration of its contents on the label. It is the League that fosters foulbrood and other bills designed to protect the interests of the beekeepers in state and nation. If the Bee Culture Laboratory that has done such effective work for the beekeepers under Jas. I. Hambleton, is to continue, it will be because the beekeepers of the country get back of the League with their dollars. During these hectic days when the personnel and funds for various departmental work in Washington are being cut right and left, when, to be more specific, the personnel and salaries of the men left in the Bee Culture Laboratory at Chevy Chase have been cut, when that Laboratory is to be moved to a locality where effective research work will be greatly hampered, the League will be needed more than ever. If it can not function, it can not stop further curtailment of bee work in and near Washington, unless the beekeepers of the country get back of the only national organization by their dollars.

The Bee Culture Laboratory should be put back to its former status. Certainly its funds should not be further cut, all because of a misunderstanding on the part of officials not knowing the needs of bee men and horticulturists whose interests interlock.

These matters were talked over in committees at the Valdosta meeting. It was made clear that the League as well as the Institute, should have our enthusiastic support.

Those who have not renewed their memberships for the League should send in their dollars at once to Prof. V. G. Milum, Secretary of the American Honey Producers' League, Champaign, Ill. Don't let another twenty-four hours pass until you do this duty. There is no knowing what Congress may or may not do now that it is in session again. There is no knowing what those who are making cuts right and left may do unless a legislative committee of the League goes down to Washington, D. C., to protest or instruct.

Bees and beekeeping should not be measured by the amount of honey or beeswax produced in the country. The bees so interlock with the horticultural interests that the fact should be known to the powers that be.

The amount of fruit in dollar value to the amount of honey and beeswax in dollar value is all the way from ten to twenty times as great. In other words, the value of the fruit which the bees help to produce is from ten to twenty times as great as the combined value of honey and beeswax. A committee from the League can make a few of these facts plain to those who give the impression that beekeeping is a minor industry. It will take pressure and money legitimately spent, to put through legislation to protect honey and the Bee Culture Laboratory.

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Where Are the Bees?

It is estimated that there are close to five million colonies of bees in the United States. It is frequently possible to travel hundreds of miles without seeing a beehive. As a rule, commercial apiaries are not in plain sight of traveled highways. They are usually hidden back of orchards, thick woods, or tucked in cozy ravines, away from the prevailing winds.

Small back-lot apiaries are frequently located close to buildings, or within plots surrounded by trees. The writer once visited the owner of a 200-colony apiary. The hives were invisible from the road, yet the entire apiary was close to the dwelling house and enclosed by a rectangle of evergreen trees that sheltered the bees from the cold winds and hid the hives from the view of curious and meddlesome passers-by.

Hives of bees are sometimes kept on verandas, flat roofs of buildings, in attics and rooms of dwelling houses with entrances of hives facing tunnels which lead outdoors. Bee inspectors frequently experience difficulty in finding colonies of bees that are said to exist in certain areas. This is especially true in cities and towns.

If and when the per capita consumption of honey increases and more bees are kept to produce more honey to supply increased demand, also to save the millions of pounds of precious nectar that go to waste yearly for the lack of bees to gather it, more bee hives and more apiaries will be in evidence throughout the country. Beekeeping will then become a larger branch of agriculture than it is today.

From North, East, West and South

SOUTHERN CALIFORNIA.—Another inch of rain during the past 24 hours makes us all feel that the new year is starting off in a very promising way for the beekeepers of southern California. Streams are running in good volume and the soil is wet to a greater depth than at any time for many years past. Seven and one-half inches in our section to date, which is the largest rainfall to this date of any season since 1889. The rain has come gently and has soaked deeper into the soil. Honey plants are showing a nice start already and just as soon as the days get a little longer and the weather a little warmer the blossoms will begin to appear on the black sage, filaree and other early bloomers.

It is unfortunate that so many apiaries are run down. It always takes a good part of the early honey flow to get weak colonies in condition to gather honey, to say nothing of the necessity of making increase to fill empty hives.

Some of the large operators who have moved their bees, one, two and three times the past season trying to get them through with a little surplus, are moving back to their former ranges, feeling that it is not advisable to move to the orange as our early sage ranges are practically as early as the orange, and in a good season should give as good a honey flow. By this method it saves one move with the prospects of just as much and just as salable a honey. Not all migratory beekeepers will do this, however, as there are many beekeepers who move to the orange every year, feeling that they never fail to get some honey and occasionally a good crop.

Many people are of the opinion that we are at the end of a so-called "dry cycle," and at the beginning of a "wet cycle" for southern California. As to the length of these cycles opinions differ all the way from seven to as many as thirty years.

One thing to our advantage in future years is the building of our storage reservoirs, such as the Boulder Dam on the Colorado River, and the spreading of surplus water over great gravel deposits where it trickles through and is pumped out in later years, sometimes miles from where it sunk into the sand.

Now with Jay Smith's "six-mile" bees and "seven hundred colonies" in one apiary (referred to in January Gleanings) what a snap modern beekeeping will be. Guess we will have to blame our spring winds for our failure to get an orange honey crop one-half of that distance. But we live and learn.

All the Honey Will be Moved Before the New Crop Arrives

Demand for honey during December remained rather quiet, but prices remain firm. Prospects for a greater demand in January as inquiries are already coming to those who are fortunate enough to have any orange honey. Very few beekeepers have any honey on hand, and we all feel that it will all be moved before the new crop arrives.

We sometimes wonder what would happen if the brokers bought up the honey crop as the season closed, and did not have to bargain around among a lot of beekeepers, many of whom are always in need of money.

Beeswax is in good demand but few producers have wax, and many of those who have will be using it to get foundation for the coming season.—L. L. Andrews, Corona, California.

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NORTHERN CALIFORNIA. — 1934 with its ups and downs for beekeepers, has passed into history and we look forward to a brighter and better 1935. A few of us are still looking on the dark side. It would be better to be like the Indian, who, when asked concerning the health of his son who was in the last stages of tuberculosis, answered, "He is coughing better today." Surely we can at least say we are coughing a little better. The great majority of us can say more. We can look back over the hectic days of the past few years and see all along the line where thinking might have helped us. We are thinking now and by thinking we find a very important suggestion—cut expenses. We are better beekeepers because of thinking. While the world has been changing, we have changed and the change has brought us to the place where we see clearer the future of beekeeping.

We have learned that our industry is different from all others and to be successful we must study bee behavior, the source of nectar production, etc., then apply this knowledge to our beekeeping practice.

Our meetings are all better. The 1934 convention at Santa Ana led all the rest. For co-operation it set us an example for all time. We had many difficult questions before us, but they were all ironed out. The lines for the future were clearly drawn. After hearing a fine address on "New Ideas," in which the speaker endeavored to show the lack of by-products in honey as compared to other crops, we could all see that he was right and a great field of opportunity opened up before us. One enthusiastic member suggested a "New Idea Committee"; another suggested that the American Honey Institute might cover that field. Then it was suggested that we should consider ourselves one great committee and keep working on new ideas. The President announced, "Let us move on." When the session closed we left Santa Ana with full determination that 1935 should be an all-round successful honey year in California.

With the work before us that Dr. Eckert has planned and the course outlined by H. M. Krebs in the field of inspection we will have a busy year. Then there is the fine assistance we are receiving from the Pacific Coast States U. S. Laboratory, which is more appreciated by our members as the years pass by.

One of the first steps of our Association will be to outline our next "five-year plan," and at the proper time invite all of the five Pacific Coast states to meet with us in our next convention. We will not confine our invitation to the territory west of the Rockies but welcome all visitors from other states and Canada.—Cary W. Hartman, Oakland, California.

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ARIZONA.—So far we have had a very mild winter here. On November 15 I noticed bees coming in with pollen and again January 2 and 3. Evidently it is from mistletoe. Pollen is usually abundant along the Gila River in February with swarms issuing or coming forth the last week of the month.

Recently we have had fine general rains over the entire state, but snows have been extremely light over the high mountain areas which furnish irrigation water to the valleys. Considerable vegetation has started from recent rains but there is a possibility of colder weather later which would make it of no value. In view of the fact that Easter comes April 21, there is a chance we may yet have some cold weather here. Should the rains continue, there is prospect of a fine spring for bees over the desert region of this state.

The yield the past season was very light generally. Due to lack of rainfall there was no fall flow. One inspector stated he found more colonies going into winter short of honey than ever before. Producers received such a small crop they were forced to sell and did not reserve the usual amount for winter feeding. Colonies examined lately were well supplied with bees. Very little honey is consumed by them until spring brood rearing starts. Many will die if not watched closely and fed at that time.

Not Much Honey Left. Prospects For Coming Season More Encouraging.

And now in spite of the small crop, I am informed the price of honey is going down. Just why this should be I am unable to understand. As far as I know very little honey is in the hands of the producers. In fact, I know of only three producers who have honey.

Most of the producers I have talked with lately feel that we have better prospects for a crop this coming season than we had last season. The season of 1935 will have to be a very poor season indeed if it is not a better one than the past season.—Leslie Wedgworth, Oracle, Arizona.

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GEORGIA.—The Valdosta meeting is now in history. In every respect it was a great get-together. Much was accomplished through business transactions; the social features were the very best; everybody seemed to be at home and enjoyed it. Many took active part in all matters of discussion. The display of honey, package bees, nuclei, queens and beekeepers' equipment were nothing short of a great and worth-while show within itself. Almost every state had something of interest at this exhibit.

This was the first great meeting of its kind ever held in the South and we hope and trust that it will not be the last. It

will never be forgotten as the greatest all around get-together beekeepers' meeting ever held in our midst and will always be a bright spot in the history of our southern beedom.

The extremely dry weather still prevails, all through the southern part of the state, and if it doesn't rain soon we will be confronted with another partial honey failure. The gallberry, spring ti-ti, and huckleberry can easily be watered by showers, since the bed of their feed roots lie close to the surface of the soil, but it takes heavy rains and many of them to properly water the black gum, tupelo gum, tulip-popular and white holly, for these important plants send their feed roots down into the rich muck soil and if there is not a bountiful amount of moisture, these honey plants will bloom sparingly, and the blossoms will be imperfect, and soon drop off with but very little fertilization.

The recent heavy freeze did no damage to our honey plants since they were dormant, but it did send a heavy chill over the bees affecting them severely since so many dead ones were found on the alighting-board.

Many of our southern beekeepers ignored the most essential thing about the preparation of their bees for wintering last fall, that of reducing the space above and below the brood nest. All empty supers and hive bodies should have been removed, placed in a closed room early last fall and fumigated, or they could have been removed just after the first cold spell, and stacked between covers, so that wood and field mice could not enter and damage the comb. These extra hive bodies and supers containing empty comb are indeed a great burden to bees during the winter, for living temperature must be kept by the clusters in order to exist, and it can be readily seen how detrimental so much extra space will be. Besides, bees will scatter out through these great stacks of empty comb and when a sudden drop of temperature occurs they have to freeze and drop to the bottom board. It is none too late to do this great work now, for it is a critical time in the existence of every colony for brood rearing is coming on rapidly and the bees will necessarily be forced to enlarge their clusters in order to hover over the brood, and even one empty super above or below will be very detrimental. It is also important that the food chamber be put down on the bottom board and the hive body containing the brood be placed on top, so that the warmth of the sun coming down on the cover will help the bees maintain their heat. Arrangement of this kind has long been estimated to save from 30 to 40 per cent of the stores, which means considerable within itself. Then, too, brood rearing will progress so much more rapidly.—J. J. Wilder, Wayeross, Georgia.

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NEW JERSEY.—New Jersey has so far enjoyed a rather mild winter. As far as the temperature is concerned the thermometer has not fallen below 10 degrees, or in that general vicinity, and then only once or twice. Since sometime in the early part of November there have been no days warm enough for the bees to have a flight. We have had a number of days where the noonday temperature has been close to 40 degrees for a short time. This long confinement is probably doing more to consume stores and to injure the bees than if we had some colder weather.

We have not yet had a snowfall that has remained on the ground for any length of time. The winter weather conditions have shown little effect upon next season's honey plants, as the main bulk of our flow comes from the fall flowers and other forms of weeds or wild growth which do not seem to winter-kill to any extent.

Several beekeepers who have opened their hives lately, for one reason or another, report that they believe the stores to be insufficient to carry the bees through until spring. Under these conditions, our state bee service recommends lump sugar, as food, placing this over the frames and covering with a quilt or some similar protection to keep the heat within the hive.

Honey sales are continuing very well, especially for the smaller beekeeper who depends upon a small but steady stream of consumers calling at his door for the product.

One of the most far reaching events concerning New Jersey beekeeping is the retirement of Inspector E. G. Carr, who has been head of the New Jersey Inspection Department for well over 20 years. During this time both he and the New Jersey bee inspection work have become well and favorably known throughout the country. At the present time no new inspector has been appointed to fill the vacancy.—John Conner, North Caldwell, New Jersey.

OKLAHOMA.—Although there have been several cold snaps, we haven't had any real Oklahoma winter weather yet. Our weather with a few exceptions is very irregular, changing quickly from cold to warm temperatures or vice versa. Beekeepers and fruit growers are hoping for our winter weather now rather than next spring. Greater honey and fruit yields result from having our regular winter in its proper season.

I have noticed in the show windows of several grocery stores that honey is prominently displayed. The grocers stated that the honey was moving at a good rate.

In today's (January 6) Daily Oklahoman, Mr. L. J. Austin, State Apiary Inspector, says: "It is safe to say that a large percentage of bees in Oklahoma would either be contaminated or dead from A. F. B. if it had not been for the efforts of the agriculture department." Mr. Austin also reported that one season's report shows 8318 colonies of bees inspected and of this number there were 601 diseased colonies. There are many farmers in Oklahoma who keep from three to ten colonies of bees. Many people who live in villages, towns, and cities also keep bees. These people are entitled to protection that is necessary to ward off bee diseases.

Volunteer clover in the state is increasing and more pasture land is being sowed in clover.—Clarence J. Tontz, Stillwater, Oklahoma.

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WISCONSIN.—Wisconsin is covered with a heavy blanket of snow and ice which to most people means only that driving is difficult and dangerous, but to our farmers and beekeepers it means moisture and that the drouth has probably ended.

Prospects for a honey crop in 1935 are excellent and much better than for four years. Early fall rains started young clover over almost the entire state, and with the heavy blanket of snow there is little possibility of its being harmed during the winter.

Beekeepers in general seem to be feeling more optimistic, although quite a few of them are holding small lots of honey. Only one beekeeper is known to be still holding a carload lot. Most of them have from 500 to 10,000 pounds which they are holding for from 7 cents to 8 cents. Recently one shipment of 20,000 pounds at 8 cents was made. Although honey seems to be moving slowly right now, we believe most of the Wisconsin crop will be moved before the new season.

Bees were in better shape this fall than they have been for three years, and up to January 1, are wintering in excellent condition.

Some of our beekeepers are beginning to get worried about the possible losses due to spraying although perhaps fortunately where most of the bees are found there are no large orchard holdings, and it does not seem that the damage can possibly become as serious as in other states, particularly California where the situation seems to be unusually serious.

A complete list of the books and journals in the Dr. Miller Library has been compiled by C. W. A. workers, and a plan is now being considered whereby it is hoped that a complete list may be issued in mimeographed form. The difficulty with the plan, however, consists in securing the necessary finances for printing or mimeographing. However, the administrative office is favorable to the plan, and it is hoped that within a year or two such a list can be prepared for distribution.—H. F. Wilson, Madison, Wisconsin.

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NORTHERN INDIANA.—Steady cold weather has prevailed during the last month with several inches of snow covering the ground. Temperatures have varied from zero to about 32 degrees above. Bees in cellars are wintering well, as apparently are those outside. Few beekeepers in this locality pack bees for winter, most of them leaving the hives on summer stands, aiming to make up winter losses by garnering swarms the next season. Any way, they seem to have better luck on the average than one would expect.

Honey is moving rather slowly seemingly due to lack of cash on the part of consumers. We still read that prosperity is looking around the corner, but as yet it has failed to find us in this corner of Indiana. Of course, the farmers are getting better prices and are spending more in the retail stores for necessities. So also, Uncle Samuel's dole and FERA money is reaching the laboring class. Much of this is being spent for wet goods, but as for honey, well, that has to wait, for honey, as you know, is a luxury as compared with the liquid assets of the "taverns." Property owners, who are heavily taxed, are hard hit, and for them, conditions seem

worse than at any time yet. They can afford to buy only the bare necessities. Also, more families than ever before are on poor relief. Consequently, sales are not as brisk as they otherwise would be. However, there is not much honey available to be sold and it is believed that it will all be cleaned up before the winter is over.

Cost of Producing Honey Must Be Lowered.

Reports are current that commercial beekeepers are planning a considerable increase in number of colonies, which may mean lower prices in the future. It must be remembered, however, that honey prices do not follow completely the law of supply and demand, owing to competition of other sweets. It is probable that prices for our product never again will go much above that of sugar. Consequently, unless we are content, as many seem to be, to operate at a loss, we must produce at a lower cost or go out of business.—E. S. Miller, Valparaiso, Indiana.

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MICHIGAN.—The outstanding fact about Michigan beekeeping just now is that more beekeepers are holding their honey than ever before. Just what the outcome will be is problematical, but judging from reported conditions elsewhere, it appears likely that the holdouts will win.

Snow and rain have helped moisture conditions, but we are still short ten inches of rainfall from last season. The January thaw we have been having recently was not quite warm enough for bees to fly in this area. While the weather has been steadily cold since Christmas, some colonies opened recently had several combs of brood.

Appropriation of $25,000 Needed With Which to Fight Foulbrood.

The legislature is in session again and beekeepers throughout the state must realize that if we are to have anywhere near enough money with which to fight foulbrood they must get their representatives and senators sold on the needs of beekeepers for $25,000, with which to carry on this fight against foulbrood. Every fruit grower who expects to rent bees for pollination must be made to realize that foulbrood is spreading promiscuously throughout his neighborhood again after it was once cleaned up, because the last legislature arbitrarily reduced the funds for apiary inspection to the point where it was impossible to even hold the ground gained. We know several beekeepers who have made a practice of renting bees to fruit growers who got their bees polluted with foulbrood last spring and will have to melt all their combs and clean up before spring. Mr. Beekeeper, you must get out of your rocking chair and go to work if you want apiary inspection. This legislature is going to be hard-boiled when money is asked for.

The new officers of the Michigan Beekeepers' Association are: Harold Albaugh, Gowen, President; Jay Cowing, Jenison, Vice President; O. H. Schmidt, Bay City, and Frank Rasmussen, Greenville, Executive Committee members. This group has been holding frequent meetings to determine policy for the coming year and to perfect an organization of beekeepers in Michigan that will accomplish better marketing conditions and eradicate foulbrood. Every red-blooded beekeeper in the state is hereby invited to join the association and help work out a real new deal for beekeepers. It can be done. There is nothing impossible about it. But you can't "let George do it" any longer. And if you don't get into this and get things fixed up like you want them, don't come around a few months from now and sob because the legislature passed some laws about bees that you don't approve of. And we have positive information from Lansing that this is no idle dream.—R. H. Kelty, East Lansing, Michigan.

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IOWA.—The spring series of radio discussions for honey producers will start Monday, March 18, over WOI at 12 o'clock noon. This is the regular time which has been assigned for these discussions for several years and producers should be anticipating and be prepared to tune in for the opening discussion. This series of discussions will continue for 15 weeks.

The club project offered by the Agricultural Extension Service has been entirely revised and special emphasis will now be placed on the matter of interesting the older club boys, and perhaps some who are above club age, in becoming interested in honey production as a line of endeavor

which can be used for a profitable avocation. Provision is made for an agreement with the parents which will permit the boy to expand his honey producing operations as rapidly as possible in order to develop a business of his own. It is expected that there will be considerable interest in this line of endeavor as a result of some of the economic conditions which have prevailed during the last three years. Especial help will be given in the organization work and in the general educational program throughout the season in order that these clubs may have a good start and enjoy a profitable and satisfactory year.

The weather conditions are of interest to every honey producer, and in these times of uncertainty the prevailing weather is more carefully scrutinized than in more nearly normal times. The moisture which has been available in Iowa this year is more than has been experienced for the last three years. It has occurred both in the form of rain and also snow. In spite of this moisture, there has been a lack of ground coverage and there is some question as to the effect this may have upon the successful wintering of honey producing plants. The temperatures have been much below those of the last three years with many frequent and severe changes. One day has been warm enough for flight activities and the following day the temperature has been below zero. Of course, these alternations may be a benefit in that it enables the cluster to reorganize itself and reincorporate their stores.

The bees during the past three winters have come through in very poor condition due in part to the high temperatures which permitted excess activities.

The item of honey plants is one of much concern to producers. The new seedings of sweet clover last year were almost entirely killed by the severe drouth so that honey plants will have to depend upon old seedings and pastures of sweet clover. The rains during the fall and early winter have made many producers hopeful of a renewed honey flow from white clover.

Even though there is some uncertainty as to the definite prospects for the season of 1935, producers in general are optimistic and especially the commercial producers. The slogan seems to be to cover every bottom during 1935. This will not mean any increase in holdings over those of three or four years ago but will probably mean an increase over the holdings of the last two years. There still remains a large number of holdings by the sideline producers and by hobbyists which will be out of the picture of production in 1935.

Honey in the producers' hands has been an unknown quantity for some time. The problem confronting some of the producers who attempt to market their own crop is that of finding sufficient honey with which to carry their trade until a new crop is produced. It may be a matter of relative importance but it seems as though the demand for honey has been greater this year than in normal times.—F. B. Paddock, Ames, Iowa.

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TEXAS.—The weather for December was a fiitting end for a year of the most erratic weather conditions experienced in this section in a long time. We have had in one year a period of profound and unprecedented drouth and a rainfall above the normal. The result of the rains during the last ten months is that all plants, both perennial and annual, belonging in the state of Texas are in better shape than for five years. There is sufficient moisture in the soil to insure the bloom of all early annual or perennial herbs. The desert shrubs which give the large honey flows have made fine vegetative growth these two months and will be ready for a big bloom in early spring.

The article on the filtration of honey by R. E. Lothrop and H. S. Paine of the Bureau of Chemistry and Soils, which appeared in the December numbers of the beekeeping journals, has created a large amount of interest among the beekeepers of Texas, where the chief problem of honey marketing is to keep the honey from granulating until it has been delivered to the consumer. At least four influential beekeepers have become so interested that each is considering putting in some kind of a filtration plant. During the month Mr. Lothrop visited Texas and called on quite a number of the larger beekeepers and conferred with them relative to their needs along the line of chemical investigations of honey and beeswax. He visited the Apicultural Research Laboratory and made arrangements whereby the Laboratory would collect honey and data for the experimental work which is being carried

on by the Bureau of Chemistry and Soils.

Professor H. F. Wilson of the University of Wisconsin, visited Texas the first of December. His object of visiting the Apicultural Research Laboratory was to look over the library and to plan the enlargement of the Texas library from duplicates in his possession.

Every year finds a large number of people purchasing a few colonies of bees with no idea of producing honey but for the purpose of study and amusement. The latest addition to the host of admirers of the honeybee is Colonel Charles B. Clark of the Twenty-third U. S. Infantry. He will be retired from army service in a short time and has purchased a small tract of land near San Antonio where he has built a real home. The colonel expects to pass the rest of his life in this most beautiful spot and as amusement he intends to "watch things grow." He already has started an orchard and a model poultry yard in which he has a large number of varieties of birds ranging from "banties" to turkeys. His latest addition consisted of two colonies of bees. From his enthusiasm and experience in beekeeping which started near Boston, then was taken up in Vermont and later in the Philippine Islands, it is safe to predict that the colonel will become one of the enthusiastic beekeepers of Texas.—H. B. Parks, San Antonio, Texas.

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ONTARIO.—This is January 11, and what a difference as compared with this date of a year ago. A week ago we had about a foot of snow on the level with great piles around the fences. For the past five days the weather has been mild and for two days we had a downpour of rain. The fields and roads are now bare again. This is not good for clover and wheat, nor the bees.

A year ago below-zero weather prevailed for this period of the winter and indeed for three months or more. This winter to date has been much milder than a year ago, yet we have had several days of zero or a bit lower but no prolonged cold spells. Bees had a good flight on November 23 last fall as compared with an earlier flight on October 17, in 1933. They appear to be wintering in perfect condition so far, but of course the winter is young yet.

Local sales of honey are slow at present and I regret to say that export demand is also sluggish. Reasons given in late issues of Gleanings in this department explain the slow demand in Great Britain. Other European countries are practically closed to honey imports.

I rubbed my eyes and wondered if Jay Smith was not joking when I read, on page 41, January Gleanings, what he had to say about the impossibility of overstocking a location. With some fifty years' experience with bees, my knowledge on the subject of beekeeping may be divided into three parts: first, many things I know nothing about, a lot more things I am not positive about, and a very few things that I am absolutely sure about. Among the latter is the fact that here is Ontario, at least in our locality, there is a real danger of overstocking. If we kept 700 colonies in one place, we would not earn our salt, let alone pay taxes and meet other unavoidable levies. In fact, we have our apiaries now scattered into small lots of from 25 to 70 colonies, according to location, and we know that it is the only way to be fairly sure of a fair return from the bees. It adds to cost of operation and makes more work. All that is admitted but it is better to spend more and make a living than to spend less and make nothing. As to Mr. Alexander's operations, do not forget that his was a buckwheat location almost exclusively, and if my memory serves me right, he wrote me once that in not more than one year in five did clover do more in his locality than build up bees for buckwheat flow. Mr. Alexander never reported high colony yields. Seven hundred colonies placed in one locality here in Ontario would never build up to storing strength in time for the clover honey flow. Yes, bees under certain circumstances will go quite a distance for nectar. For many years buckwheat was grown four miles away from our home yard. Not an acre was grown near us at that date. During all these years the apiary of the late Mr. Davison of Unionville annually stored a surplus from buckwheat showing that the plant was yielding nectar all right. But our bees during all these years with nearest buckwheat four miles away never got a drop of buckwheat. An experience like that means more to me than all the theorizing or isolated cases that may be cited to prove the bees consistently go much more than two or three miles away for nectar.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

A Life Saver After the Drouth

On July 25, 1934, Goliad County had 6.34 inches of rain accompanied by a very strong wind which damaged houses, put out electric lights, blew down trees, and upset many hives of bees. About three weeks after the rain storm knockaway trees were in full bloom. Many old-timers had never see knockaway trees bloom at that time of the year. Spring is their blooming time. The tree while in bloom is a bee paradise. If you were to walk under a tree you would think a large swarm of bees was passing over your head. We have several hundred trees in Goliad, and there are many more on the San Antonio River. Good strong colonies will store a shallow super or perhaps more. The honey is somewhat bitter but when mixed with other honeys, it has a good flavor.—Ira Lambright, Goliad, Texas.

A beautiful knockaway tree in full bloom.

"Pease vs. Pease" Again

I got what in modern parlance is called "quite a kick" out of that little "Pease vs. Pease" article in the December Gleanings; not that I was surprised to learn of another C. H. Pease, because I already knew of three others, one of whom is a beekeeper. This Mr. Charles H. Pease of Marlboro, N. H., who says he is coming down to see me some day, exposed just enough of his methods of beekeeping to tell me that we are going to have some fun comparing notes, discussing and arguing. He says he winters outside and "why change and get a backache?" But how about covering all of his colonies by shoveling snow over them? There's a heap of backache in snow-shoveling for me and very little in the way I roll my bees into the cellar. I think he gets a lot more backache than I do. He says I have made "some notable success in beekeeping and honey production and . . . poetry." I plead not guilty to all three; all I can say is: Here's to my namesake, Charles H. Pease, who, like myself, is a keeper of bees. You write your name Charles Henry Pease, while I write mine Charles Howard Pease, but who cares what's the middle name? We're two C. H. Peases, just the same. I'd go up and see you if I could; but you come down—you said you would. Although on wintering we don't agree, if you come here I think you'll see that when old winter's breezes freezes thousands of outside-wintered beeses, mine are safe inside with me, contented and happy as they can be. They care not if the blizzards bliz, nor what the outside weather is, because old winter's frigid breezes never freezes Pease's beeses. So once again, C. H., I say, just steer your buzz-cart down this way; we'll be as busy as bees in clover—we'll scrap, and argue and talk it over.—C. H. Pease, Canaan, Conn.

Beekeeping Needs Bookkeeping

Can we not have more articles treating the "profit and loss" angle of beekeeping—articles that would be sane and simple and current facts used rather than a hypothetical set of figures? After all, wouldn't repetition of the fact that it really costs money to produce honey, that there is a definite relationship between fixed charges and maintenance and sales expense and the beekeepers' check book, do much to reduce senseless price-cutting? Couldn't most beekeepers be made to see that if their $1000 investment in honey-producing equipment was $1000 in a savings account it would earn them 3 per cent? Therefore, production expense should be charged with this same 3 per

cent. This is but one minor detail in the plan of cost accounting.—Wm. Saltmarsh, Farmington, Minn.

Queens Laying in Cups

On page 747, Mr. Ballantyne tells of once finding a queen trapped in a cell cup. In the spring of 1903 I had a colony in a single comb observation hive swarm. Two cups were prepared and I saw the queen go to one of these cups and poke in her head. She did not reverse and lay at that time. I am a very strong believer that queens do lay in cups.—Allen Latham, Norwichtown, Conn.

A Correction

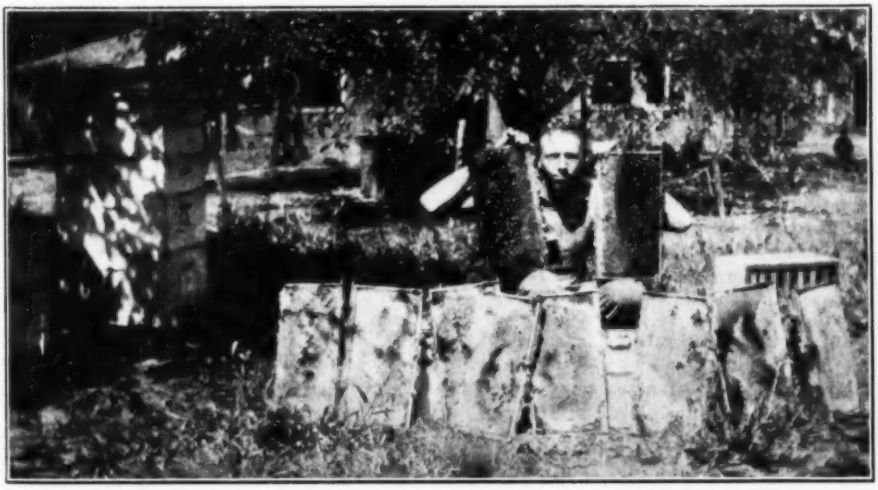
On page 731 of December, 1934, Gleanings, the cut with my article is defective. It has no perspective and it also has no foreshortening. I would offer no complaint were it not that someone may wish to try out this scheme and may make the contraption wrongly because of this misleading cut. I should have said that the box is set on the projecting end of the bottom board. Now this in most hives is rarely more than three inches, and so the box from front to back should be three inches or under. The cut makes it look to be six or seven inches. Such a box would be all right if the bottom board will take it. Having no bottom the box demands the bottom board as a bottom. If one wishes to use a box larger than the bottom board will take he can do so by nailing a strip over that part of the bottom of the box not closed by the bottom board.—Allen Latham, Norwichtown, Conn.

Don't Forget Missouri

This picture shows only a part of my bees. You can see that there was a good honey flow on. I'm located two and a half miles south of the Missouri River and near

A super from locust and one from apple bloom is the record of this apiary.

some of the best apple orchards in Missouri. The Salt Fork bottom has lots of waste land and timber, and lots of honey locust trees. In 1931 my bees averaged one super of locust honey, and also one super of apple honey, besides later flows. —Roy Kalthoff, Waverly, Mo.



These colonies in Missouri give a good account of themselves.

From Foreign Lands

W. J. NOLAN

The post-war period has been one of the most active in beekeeping history, and is comparable with that extending from the discovery of parthenogenesis in the honeybee by Dzierzon in 1845 to the invention of the extractor by Hruschka in 1865, the interim being marked by the work of Langstroth and other eminent investigators, as well as by the invention of the foundation press by Mehring. The last two decades have likewise seen new inventions and discoveries in all fields of beekeeping ranging from the radial honey extractor to a small mite which causes disastrous losses to colonies of bees. New methods of processing honey have been developed, and the wholesale co-operative marketing of honey has been accomplished on a scale greatly in excess of that in the era before the war. The package bee industry has been established as a major subdivision of beekeeping in the United States and is receiving attention in other parts of the world. Apicultural research stations are now maintained in many countries. New bacterial bee diseases have been described and the problem of control of American foulbrood has been attacked on a scale relatively huge in comparison with the early days. Even the internal structure of the bee has yielded new secrets, while the external structure has been carefully studied and measured under the microscope to secure a trustworthy means of identifying various races and strains of bees. Means for securing absolute control over the mating of queen and drone have been worked out. Beekeeping journalism has achieved new heights. Large beekeeping libraries have been established in this country. In the field of behavior outstanding studies have been made, such as those on communication among bees, the division of labor, the time sense, and the like.

In recent investigations in the field of bee behavior the name of v. Frisch is well to the front. He attracted attention through publication in 1919 of the first of his noteworthy studies on how bees communicate to each other the fact that a nectar flow is on. This means of communication has received much publicity under the name of "bee dances." He has now published, in the "Zeitschrift für Vergleichende Physiologie," a work of 156 pages devoted to the sense of taste in the honeybee. This subject in particular is a post-war development because, as v. Frisch remarks, little was known about the physiology of taste in insects in 1925 when he took up the study. Forel, it is true, had done some work in this field. It was only in 1932 that D. E. Minnich of Minnesota found organs of taste on the tarsi of the honeybee's legs, particularly on the first pair. Prior to this time such organs had been described as present only on the antennae and mouth parts.

v. Frisch conducted his experiments by placing a solution of the substance being tested in a feeder to which bees flying freely from their hives had been trained to come. These bees were marked. It is interesting to learn that several of the bees came to these feeders for four weeks and one came for seven weeks.

In all, 34 sugars or other substances were tested for sweetness. Thirty of these taste sweet to the human tongue, but for the bee apparently only the following nine are sweet: sucrose, dextrose, levulose, alpha-methylglucosid, maltose, trehalose, melezitose, fucose, and inosite. The last two proved somewhat less sweet to the bee than the others, and, according to B. Vogel, have no food value. Each of the other seven is said to support the bee's life equally well. Various other sugars were found to have little or no taste or even to be repellant in their effect. Raffinose, for example, which is sweet for the human tongue, was apparently tasteless to the bee. On the other hand, dextrose (glucose) is about as sweet as levulose for the bee, while for us dextrose is only about half as sweet as levulose.

The bees never refused a 2-molar sucrose (cane-sugar) solution. Such a solution consists of 64 grams of sugar in every 100 ccs., being really a 64 per cent solution. A 1-molar (34.2 per cent) solution was usually accepted by practically all the bees, but a ⅛-molar (4¼ per cent) solution was scarcely touched. Although the

stimulating odor of sugar syrup is slight according to v. Frisch, yet to make sure that any difference in choice of concentrations was not due to differences in odor instead of differences in concentration, he surrounded the sugar solutions with strong odors. In no case did the response of the bees vary from that just described.

v. Frisch holds the specific threshold of response in the case of a sucrose solution —in other words, the weakest concentration to which the bee will respond—is to be found within the limits of a $\frac{1}{16}$ and $1\frac{1}{8}$-molar solution because bees kept hungry for three to six hours would not touch weaker solutions. Most of the bees tested did not even touch the $\frac{1}{16}$ molar solution while those which did merely tasted it.

The observation showed that in times of good nectar-flows the threshold is higher, on the average, than in times of bad nectar-flows. In other words, in times of good nectar flows, the bees deserted the syrups with thinner concentrations. The threshold was found to vary for any one test, depending on the sugar concentration of the solutions taken shortly before; thus, the phenomenon of weariness of taste organs, observed in man, is also found in bees. Furthermore, the threshold varies from bee to bee, and may even vary in the same bee, becoming higher with age.

Osmotic pressure and viscosity of the solution appeared to have no influence on the threshold of response. Likewise temperature had no influence within wide limits. The bees took syrup freely even when it was 46.4°, but hesitated when the syrup was 40°, and stopped when it was only 33.8°. They took syrup freely which had a temperature of 122°, but hesitated when it was 131°, and stopped when it was 140°. This high temperature is uncomfortably hot for the human tongue, while foods just a little hotter burn it.

v. Frisch's results lead directly to the conclusion that natural honey sources have higher sugar concentrations. In comparing his results on sucrose solutions with analyses of nectar, particularly those by O. W. Park in Iowa, and by Miss Beutler and Miss Kleber in Germany, v. Frisch notes that of 40 honey plants only five were reported to have less sugar content than would be present in a 1-molar solution. Park recently stated that honey plants of Iowa during flight hours have a sugar concentration of 30-65 per cent. Many low concentrations which have been found were obtained on nectar collected in the early morning.

It is of interest to note that the sweeter the solution, the livelier was the nectar dance on the return to the hive, and the greater the use of the scent gland in spreading the bee's own odor at the source of food. A thin solution was borne in without any resulting dance. The quantity of sugar solution which a bee carried back to the hive was found to be greater, the sweeter the solution. It also varied somewhat with the temperature.

Thinned acids were turned aside from by nectar gatherers after brief taste tests. By using the acids directly, or in solutions, it could not be determined whether the bee tasted the acid, but by adding an acid to a sugar concentration which was taken freely, it could be seen that at a certain concentration each acid tested acted as a repellent. The limits were sharply defined, and removal of antennae showed that smell was not in question. The real threshold value for acids was not obtained. In the case of hydrochloric acid the bee was found to be at least as sensitive as man.

The bee was shown to be more sensitive to ordinary table salt than is man, but less sensitive to many bitter materials. For example, the bees took a sugar solution to which sufficient quinine had been added to make it gripingly bitter to the human tongue. Cocain appears to be fully as bitter to the bees as is quinine, whereas for the human tongue it first tastes equally bitter when given in 40 times higher concentration.

v. Frisch raises the question as to whether the bee really recognizes the four kinds of taste which we designate as sweet, sour, salty, and bitter. By a series of appropriate tests to determine qualitative differences, at least, he reports he found that bees do distinguish between the taste of quinine and table salt, hydrochloric acid and table salt, and between table salt and quinine. However, he is not certain that the four kinds of taste just mentioned cover the whole range for the bee because in the experiments the use of quinine gave somewhat different results than did some of the other substances which we class as bitter.

Gleaned by Asking

THE EDITORS

Improving Bee Pasture

Question.—Is there anything that you know of that I could grow that would insure honey every year?—Ernest Carver, Missouri.

Answer.—If you are in a good clover locality, one of the best crops to grow, so far as nectar is concerned, is alsike clover. While it does not yield nectar in large quantities every year, it is one of the most dependable honey plants. Sweet clover is also an excellent honey plant and yields some nectar every year. As a rule, it does not pay to cultivate any plant for the nectar it secretes alone, but such plants as sweet clover and alsike clover are valuable farm crops and at the same time excellent honey plants.

Dividing Colonies in Spring and Rearing Queens

Question.—For several years we have been practicing the "division and another queen above" process of building up colonies for the sweet clover flow. We would divide a colony in late April or May and put a southern queen in the division above. At first we used solid "top-bottoms" for the division above, always with a separate entrance. Last year we used galvanized screen that would not let the bees through, and also others with excluder zinc, over the escape hole, and with separate entrances. The excluder zinc colonies killed a number of southern queens while we had better results with the colonies with screen "top bottoms." We have been reading your editorials in the May issues of Gleanings for several years about making these divisions with capped queen cells instead of southern queens. We believe we will do better now to select a good breeder colony and raise our own queen cells as you do. However, we have not had any experience in grafting, and we are writing to find out just what tools we will need and how to proceed. Also, please advise what articles or books we should read in order to start off correctly in this important phase of beekeeping.—Bruce L. Morehouse, Minnesota.

Answer.—In my judgment, the best directions for rearing queens that has come to my attention are those in the series of articles written by Mr. Mel Pritchard, and published in Gleanings in Bee Culture in the February, March, April and May issues for 1932. You will be chiefly interested in the articles in the February and March issues, which deal chiefly with grafting and getting the cells started. I think you will have better results for your purpose if you will distribute the queen cells giving one to each queenless upper story when the cells are not more than 24 to 48 hours old. I have had no difficulty in having such cells accepted in the queenless upper story separated from the queenright lower story by an extracting super and an inner cover with a piece of queen excluder over the escape hole. My difficulties have come later. Too large a percentage of the young queens have disappeared. You could have your cells built in the upper story before completely shutting off communications between the two stories and establishing an entrance for the upper chamber. My experience leads me to believe that a good time to shut off communications completely is about the time the young queens emerge, or within a day or two afterwards. I have never been able to graft larvae and obtain as high a percentage of acceptances as Mr. Pritchard does. He often obtains 99 to 100 per cent of acceptances. In watching him work, I have arrived at the conclusion that his success, other conditions being equal, is largely due to the neatness in placing the royal jelly and the fact that his larvae are floating in an abnormally large amount of larval food. In the February, 1932, issue of Gleanings he tells how he accomplishes this. If the royal jelly is smeared about over the bottom of the cell cup, the bees apparently are not inclined to accept such cells.—[An unpublished anwer by Geo. S. Demuth.]

Bees in Smoky Town

Question.—Will bees do any good in a smoky town, on house tops, near large smokestacks and railroad yards?—J. G. Wyatt, Kentucky.

Answer.—Bees apparently do well even in the midst of a smoky city. In many of our large cities bees are kept in attics of dwellings or on the roofs of buildings quite successfully.

Combs of Honey for Package Bees

Question.—How would it work to feed package bees with combs of honey from a super instead of sugar from pails?—Nelson A. McClary, Michigan.

Answer.—Supplying package bees with combs of honey is even better than feeding sugar syrup. This is especially true if the combs contain some pollen. In many respects, this in an ideal arrangement when installing package bees.

Moldy Combs

Question.—Does mold on extracting combs do them any harm?—W. L. Fowler, Oregon.

Answer.—We would not expect the mold in the extracting comb to be particularly harmful. The bees apparently clean the cells well before putting the honey into them. They will no doubt take care of this.

Time to Install Package Bees

Question.—What time should I put packages of bees in hives for best results?—Frank Parker, Indiana.

Answer. — For your locality (central Indiana) package bees should be installed about the middle of April during a normal season. It requires from six to eight weeks for a package of bees to build up to full strength ready for the honey flow, which in your locality should begin about the first week in June. If there is a considerable amount of sweet clover, which would make a long honey flow, in your locality, a two-pound package of bees with queen, for each hive, will do good work. If, however, your main honey flow is largely from white clover and alsike and of short duration, you had better consider three-pound packages. The latter will build up more quickly. We suggest that you follow closely directions for installing, supplied by your shipper. It is a good idea to feed packages continuously from the time they are installed in the hive until the main honey flow begins. Of course, during a good fruit bloom and dandelion honey flow the bees may not take much sugar syrup from the feeders because of the abundance of nectar in the field. However, there is usually a dearth of nectar between fruit bloom and clover. If you have two or three combs of honey in each hive intended for package bees, all the better.

Moisture Within Hives

Question.—I have 60 colonies of bees in the basement of my honey house and there appears to be too much water draining out of the hive. There is water on the alighting-boards all the time. The temperature stands at about 43 to 45 degrees all the time. Is this too warm?—J. A. Black, Minnesota.

Answer.—There are several factors which may bring about condensation of moisture in the hive, such as restlessness on the part of the bees, too low a cellar temperature, and excessive dampness of the air in the cellar. When bees become restless on account of consuming poor stores, this greater activity causes them to eat more, which in time results in more moisture being given off. The air within the hive then becomes saturated with moisture, bringing about condensation unless the cellar is warm and dry. There may also be condensation even when the winter stores are good and and the bees are quiet if the temperature of the cellar is too low. In this case, the walls of the hive become so cold that the moisture is condensed on them, and finally the water runs out at the entrance. This can be corrected by raising the cellar temperature a few degrees so that the temperature of the walls of the hive may be above the point which causes condensation. Again, if the air in the cellar is merely saturated with moisture, the moisture from the hive does not pass out readily and may accumulate to such an extent that condensation takes place. This can be remedied by ventilation, except during a warm, damp spell of weather. During the latter part of the winter it is sometimes difficult to raise the cellar temperature so that the walls of the hive will be above the dew point, without causing the bees to become so active that many of them fly out of the hive. A little experimenting will indicate what temperature should be maintained during the latter part of the winter.

Keeping Bees on Shares

Question.—A neighbor who is a beekeeper wants me to take care of his bees on shares this coming season. Do you think this would be advisable, and if so, what method or plan is usually followed?—M. A. Bowling, Iowa.

Answer.—The method of working bees on shares has been followed out quite successfully by some, while in other instances it has not proven satisfactory. A good deal depends on the character of the parties concerned and the nature of the contract entered into. The usual terms of keeping bees on shares specify an equal division of the honey crop at the close of the season. There are many details which vary according to conditions and circumstances. They should be incorporated in a written contract similar to that outlined under the head, "Bees on Shares," in the A B C and X Y Z of Bee Culture. The question of pay for the containers for extracted honey and for the sections, foundation, and shipping cases for comb honey, should be fully understood by both parties and put into writing. As a rule, the expense of containers is shared equally between the owner and the one who takes care of the bees. The arrangement for such an emergency as feeding during a poor season, or moving the bees to another location, if necessary, should be mentioned in the contract to prevent any misunderstanding along this line. Generally speaking, it is much more satisfactory to own the bees and operate them as you think best, rather than to attempt working bees on shares.

Talks to Beginners

M. J. DEYELL

Various Methods of Beginning

The late A. I. Root, who started this journal in 1873, got his start in beekeeping from a stray swarm of bees captured during the month of August. He almost lost the bees during the winter, but did manage to save them. Some of our large commercial beekeepers started from swarms. This, however, is not a satisfactory method, unless one gets the swarms early enough in the season to secure some surplus honey the same season.

Some beginners get swarms out of bee trees. This is hard work. Unless the beginner has the ability, time, and patience it hardly pays. There is something adventurous about this work, however, that appeals to some.

Other beginners buy hives of bees locally, sometimes at sales. This method is all right provided the bees are in hives of standard dimensions on good combs, wired, in good movable frames. By rights, such bees should not be purchased unless accompanied by a certificate of inspection issued by a state bee inspector, showing that the bees are free from disease.

Package Bee Method Preferable

And why is this method preferable? Because it is possible by planning intelligently in advance to develop colonies that will secure a crop of honey the same season provided the season is favorable for producing honey. This means getting quick returns on an investment and that is what interests all beginners.

A package of bees is somewhat comparable to a swarm of bees. The secret of success with packages lies in getting them intalled in hives early enough in the season, about seven or eight weeks before the main honey flow, and in giving the bees the right kind of management.

Hives and Other Equipment

In my January talk I suggested that you send to a bee supply manufacturer for a catalog. In it you will find beginner's outfits. Hives and supers can be ordered in the flat some time this month or next and assembled in readiness for the packages of bees that can be shipped after April 15 or May 1, at a time that suits your convenience.

Beginners Who Have Bees

So long as your bees have ample food and adequate protection they need no attention during February. In some sections of the South, as for example, the extreme southern tier of states, strong colonies gather considerable nectar and pollen, especially during the latter part of this month. In the northern states and Canada this is usually a cold month.

If your bees are outside covered with snow, don't worry about them. Snow offers protection from the cold. It is porous and permits air to enter the hives. Should you find a few dead bees at the hive entrances this is a healthy sign, provided the entrances are not clogged with dead bees.

Spotting at hive entrances denotes dysentery, which is caused by poor stores, weak colonies, or long confinement. Nothing but a good cleansing flight will correct this trouble. If bees in a cellar are not restless and make a contented hum they are wintering well. If they are restless a little fresh air admitted to the cellar may quiet them somewhat. However, restlessness indicates poor cellar wintering and this is caused by poor stores, weak colonies, or improper cellar conditions.

Bees Go Into Huddle in Winter

Many people suppose that bees hibernate in winter. This is not the case. When the air in a hive reaches 57° F. the bees go into a huddle or form a somewhat spherical cluster. The outer layer of bees, or what may be called the shell of the cluster, forms a compact covering or insulation to prevent the heat within the cluster from escaping. The bees in the center of the cluster move about and generate heat by muscular activity, such as fanning of the wings and other movements. The temperature in the middle of the cluster never goes below 57° F., although it may go considerably higher than that during the winter even though the temperature of the air around the bees goes down to the freezing point or lower. Bees in a well insulated hive do not have to expend as much energy to keep warm as do bees in a poorly insulated hive. It pays, therefore, in cold climates to provide bees with ample protection to conserve on bee energy.

Exhibit A---Minimum Prices for Marketing Agreement and License for Shippers of Package Bees and Queens

(Approved January 18, 1935.)

Section 1. Minimum Prices to Consumers. Minimum prices to consumers for package bees, nuclei (comb packages), and queens are hereby established by the Control Committee pursuant to article III of the Marketing Agreement and pursuant to article II of the License for Shippers of Package Bees and Queens produced in the United States; and such minimum prices to consumers, until changed, shall be as follows:

1. The price of queens shipped or delivered from November 1 to May 31 shall not be less than seventy-five (75) cents each, postpaid; and the price of queens shipped or delivered from June 1 to October 31 shall not be less than fifty (50) cents each, postpaid. The price of each purely-mated queen shall not be less than double the price of each queen, postpaid.

2. The price of each package of bees with one queen, shipped or delivered from November 1 to May 31, shall not be less than the following prices:

(a) For two (2) pounds of bees net, $2.45 each; and for three (3) pounds of bees net, $3.15 each. For each additional pound of bees added to such 2-pound or 3-pound packages not less than seventy (70) cents additional.

3. The price of each package of bees with one queen, shipped or delivered from June 1 to October 31, shall not be less than the following prices:

(a) For two (2) pounds of bees net, $1.95 each; and for three (3) pounds of bees net, $2.55 each. For each additional pound of bees added to such 2-pound or 3-pound packages not less than sixty (60) cents additional.

4. When packages of bees mentioned in subsections 2 and 3 of this section are sold without queens, the price of such queenless packages shall not be less than the minimum prices specified in such subsections after deducting the minimum prices for queens specified in subsection 1 of this section.

5. When packages of bees are shipped by parcel post, the shipper shall charge the purchaser postage and ten (10) cents per package above the prices scheduled in subsections 2, 3, and 4 of this section.

6. The prices of nuclei (comb packages) with one comb, two (2) pounds of bees net, and one queen, shipped or delivered from November 1 to May 31, shall not be less than $2.45 each; and the prices of such nuclei containing three (3) pounds of bees net shall not be less than $3.15 each. The prices for each additional comb added to any such nucleus shall not be less than (40) cents additional to the prices specified in this subsection for each 2-pound and each 3-pound nucleus and the prices for each additional pound of bees in each such nucleus shall be not less than seventy (70) cents additional to the prices for such 2-pound and 3-pound nuclei specified in this subsection.

7. The prices of nuclei (comb packages) with one comb, two (2) pounds of bees net, and one queen, shipped or delivered from June 1 to October 31, shall not be less than $1.95 each; and the prices of such nuclei containing three (3) pounds of bees net shall not be less than $2.55 each. The prices for each additional comb added to any such nucleus shall not be less than forty (40) cents additional to the prices specified in this subsection for each 2-pound and each 3-pound nucleus; and the prices for each additional pound of bees in each such nucleus shall be not less than sixty (60) cents additional to the prices for such 2-pound and 3-pound nuclei specified in this subsection.

Sec. 2. Minimum Prices to Dealers. Minimum prices to dealers for package bees, nuclei (comb packages), and queens are hereby established by the Control Committee pursuant to article III of the Marketing Agreement and pursuant to article II of the License for Shippers of Package Bees and Queens Produced in the United States; and such minimum prices to dealers, until changed, shall be as follows:

1. Minimum prices to dealers for packages, nuclei (comb packages), and queens shall be the prices listed in section 1 of this exhibit less a discount of 15 per cent.

Sec. 3. Definitions. The following terms used in this exhibit shall have the following meanings:

1. "Consumer" means any person who buys packages, nuclei (comb packages), and/or queens for the purpose of using them in honey production, and/or bee breeding, and/or pollination, and who actually uses them for such purpose or purposes.

2. "Dealer" means any person who buys packages, nuclei (comb packages), and/or queens for the purpose of re-selling them and who actually re-sells them to consumers or to other dealers.

3. "Person" means an individual, partnership, corporation, association, or any other business unit.

Sec. 4. Basis of Prices. Except as otherwise provided in this exhibit or in the Marketing Agreement and License, all prices specified in this exhibit shall be F. O. B. prices at the shipper's or licensee's place of business or F. O. B. shipping point nearest to such place of business.

Just News

EDITORS

Beekeepers are invited to attend a short course in beekeeping conducted by the Wisconsin State Beekeepers' Association and Department of Entomology, Wisconsin College of Agriculture co-operating, on February 4 and 5, at Madison, Wisconsin.

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For several years the Bee Culture Laboratory, U. S. Department of Agriculture, Washington, D. C., has compiled a list of dealers in bee supplies, package bees, nuclei, and queens. This list is sent to correspondents who wish to purchase bees, supplies, etc. The list is now being revised and those who desire to be listed again or who wish to be entered for the first time, are requested to send their names and addresses together with information relative to their commodity, such as race of bees, packages, nuclei, bee supplies, etc., to the above address. The list will be closed for entries on February 28.

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J. E. Eckert, Davis, California, reports that in all the numerous samples of American foulbrood he has ever examined, both in the hive and microscopically, he had never seen a case in which drone brood was attacked until he received a specimen from that premier of inspectors, Mr. Roy K. Bishop, of Orange County, California. Mr. Bishop, in sending the sample, stated that it looked very much as if several of the drone larvae that had died had been infected with American foulbrood, and microscopical examination proved his gross diagnosis to be correct. The sample had been secured from a colony that evidently had been killed by the disease.

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List of Alabama pledges to American Honey Institute: Jasper Knight, Hayneville, $25; W. E. Harrell, Hayneville, $25; M. C. Berry, Montgomery, $25; J. M. Cutts & Sons, Montgomery, $20; W. J. Forehand & Sons, Ft. Deposit, $15; Holder's Apiaries, Citronelle, $15; Bolling Bee Co., $12.50; David Running, Sumterville, $10; Citronelle Bee Co., Citronelle, $10; H. C. Short, Fitzpatrick, $10; Taylor's Apiaries, Luverne, $10; Caucasian's Apiaries, Brooklyn, $10; P. M. Williams, Castleberry, $10; Alabama Apiaries, Mt. Pleasant, $10; N. B. Smith, Calhoun, $7.50; Crenshaw County Apiaries, Rutledge, $5; J. F. McVay, Jackson, $5; Lewis & Tillery Bee Co., Greenville, $3; Tillery Brothers, Greenville, $3. Total, $231.

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Elmer G. Carr, state bee inspector for New Jersey, retired on December 31, after 23 years of service. Sixty-two years old and eligible for retirement for the past two years, Mr. Carr expects to raise queen bees and produce honey in Hunterdon and Warren counties. In 1911, when Mr. Carr began his service, conditions in the bee industry of the state were serious. American foulbrood was widespread, nothing having been done in New Jersey to control it. The infection of European foulbrood had also reached serious proportions. Outstanding progress has been made by Mr. Carr in the past 23 years in reducing bee diseases in the state. European foulbrood infection has been reduced to a negligible quantity, and the control of this disease is now considered largely the responsibility of individual beekeepers. Great progress has also been made in the control of American foulbrood and in inducing beekeepers to observe practices that are favorable for the elimination of this disease. Mr. Carr has been an influential factor in the development of the State Beekeepers' Association. He has been a member of the association for 27 years, and has been its secretary since 1912, when it consisted of but 32 members. At present, the membership of the association is about 200, and it is one of the state's leading agricultural organizations. Mr. Carr has written several circulars, most notable among which is "A Manual of Bee Husbandry," six editions of which have been published, some by the Department of Agriculture and others by the State College of Agriculture.

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CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

FOR SALE—Clover extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE white clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

MICHIGAN white extracted in 60's. M. H. Hunt & Son, Lansing, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

CLOVER extracted, new sixties, extra white, 7c. I. R. VanDevier, Medina, Ohio.

BEST comb and extracted clover honey. Porterholm Apiaries, Adrian, Michigan.

550 CASES clover-basswood comb honey. Charles Guhl, Napoleon, Ohio, Route 7.

MICHIGAN extracted clover honey in sixties. Leland Farnsworth, Davison, Mich.

SEND for honey prices. Discount for quantity orders. H. G. Quirin, Bellevue, Ohio.

CHOICE clover honey in 60's. Case, $9.00. Sample, 10c. Abel Totems, Owosso, Mich.

NEW crop clover extracted honey in new sixties. D. R. Townsend, Northstar, Mich.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

WHITE clover, light amber, or amber honey, in 5, 10 and 60-lb. tins. Harry T. Gable, Romulus, N. Y.

FANCY clover honey and all other grades, in 60s; one can or a hundred. Finger Lakes Apiaries, Homer, N. Y.

FOR SALE—New crop clover honey in 5-lb. pails and 60-lb. cans, case or carload. H. B. Gable, Romulus, N. Y.

CLOVER-BASSWOOD blend honey, well ripened, in new 60-lb. cans. Sample on request. B. B. Coggshall, Groton, N. Y.

FANCY white comb, $3.25 case; No. 1 white, $2.75; No. 2 white, or No. 1 amber, $2.25; white clover extracted, 7c. C. B. Howard, Geneva, N. Y.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

CHOICE white clover honey. Lewis Klaty, Carsonville, Mich.

CLOVER honey, 60's, 6½c to 7½c lb. C. J. Baldridge, Kendaia, N. Y.

FANCY clover comb and extracted. Howard Grimbæ, Holcomb, N. Y.

NO. 1 comb white, $2.50, quantity lots. N. B. Querin & Son, Bellevue, Ohio.

CHOICE honey, new cans, sample free. Frank Rasmussen, Greenville, Michigan.

FINE quality basswood-white clover honey, in 60's. Edwin Krinke, Bay City, Wis.

CHOICE white clover extracted honey in new 60's, 7½c per lb. Noah Bordner, Holgate, Ohio.

EXTRACTED, sample, 10c, and comb, white clover honey. F. W. Summerfield, Grand Rapids, Ohio.

EXTRA light amber extracted honey. State amount required. Woodland Apiaries, Howell, Mich.

CLOVER honey, splendid quality, extracted, case or quantity. Willow Vale Apiaries, Box 594, York, Pa.

HARRIS can please you with fancy white extracted. New cans. Case or carload. J. N. Harris, St. Louis, Michigan.

RASPBERRY-MILKWEED blend in limited amount at $9.00 per case. Sample, 10c. Milford A. Tyrrell, Ellsworth, Mich.

FINEST QUALITY white clover honey, 7c lb.; amber clover-goldenrod, 6c. All new sixties. E. G. Kyte, Westport, Pa.

FINE quality orange, palmetto, mangrove or amber honey in new sixties. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

EXTRA white clover-basswood honey in new 60-lb. cans, 7c per lb.; 4 cans or over, 6¾c. A. A. French & Son, Theresa, N. Y.

FIFTEEN tons, finest quality, northern New York clover-basswood honey. Leroy C. Keet, 1003 Leray Street, Watertown, N. Y.

FINE white clover honey in new sixties, $9 per case; $8.40 for 20 cases. Sample, 12c. Arnold Panning, Napoleon, R. R. 7, Ohio.

WE offer white and amber extracted honey in pails or 60-lb. cans, also comb honey. Reasonable prices. A. I. Root Co., 224 West Huron St., Chicago, Ill.

CLOVER or buckwheat honey, combs and 60 lbs., 5-lb. cans, 32-oz., 16-oz., 8-oz., 4-oz. bottles, from producers. J. H. Scarff & Son, Box 536, Syracuse, N. Y.

NEW crop clover honey, best quality, new 60-lb. tins, in lots of 1 to 5, at 7½c per lb.; larger quantities, 7c per lb. It will please you. W. D. Achord, Findlay, Ohio.

HOWDY'S HONEY—Extra fine quality clover, white, extracted, in new sixties. Howard Potter, Ithaca, Michigan. Personal, 1200 Massachusetts Avenue, Cambridge, Mass.

FINEST Michigan clover honey. New cans and case. Did you notice that we fill our cans FULL and that they are overweight? E. D. Townsend & Sons, Northstar, Michigan.

CHOICE clover honey. Case or car. Edw. Klein, Gurnee, Ill.

FINEST clover honey priced right. Riverside Apiaries, Russell, Illinois.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

CHOICE clover in new 60's, case or carload. Wesley Johnston, Port Hope, Mich.

FOR SALE—85 cases comb honey. Prices on request. R. J. Williams, Attica, Ohio.

THREE tons buckwheat in sixties. Chestnut Ridge Apiaries, Lockport, New York.

12,000 LBS. Iowa honey. Sample, 10c. Russell Smalley, Grand Junction, Iowa.

BASSWOOD honey, 1934 crop, packed in new cans. Gelser Bros., Dalton, N. Y.

EXTRA HEAVY clover-basswood extracted honey, 7c. A. J. Wilson, Hammond, N. Y.

CLOVER and buckwheat extracted honey for sale. George Burke, Fonda, N. Y., Box 53.

FINE quality New York State extracted honey. Emery Horton, West Bloomfield, N. Y.

WHITE comb and extracted, also amber honey for sale. H. E. Crowther, Jefferson, Ohio.

8000 LBS. locust-alsike-white clover honey, extra fine. Entire satisfaction guaranteed. W. O. Hershey, 119 Pine St., Lancaster, Pa.

FOR SALE—Ohio clover and Wisconsin honey at 7c f. o. b. shipping points, in large lots; 7½c case lots. In new 60-lb. cans and cases. M. C. Berry & Co., Box 684, Montgomery, Ala.

HONEY AND WAX WANTED

WANTED—White extracted honey in 60-lb. cans. Roscoe F. Wixson, Dundee, New York.

WANTED—Comb and extracted honey. Mail sample, state quantity and prices. Sherfick Farms, Shoals, Ind.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Carlots or less of white clover extracted honey. Mail price and sample to Clover Blossom Honey Co., Columbus, Ohio.

CASH PAID FOR carloads and less than carloads, all grades extracted honey. Mail samples. C. W. Aeppler Company, Oconomowoc, Wis.

WE are in the market for honey in shallow extracting frames. Write to us for prices and shipping instructions. The Fred W. Muth Co., Cincinnati, Ohio.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send sample, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

WE want to buy a large quantity of clover honey at 7½c per pound for delivery fall of 1935. And—believe it or not—we want to pay you in advance for this honey. Responsible producers who will need packages and queens are invited to write us for particulars. Marketing agreement prices will apply on all packages. Nations Bee & Honey Farms, Licensed Shippers, Donna, Texas.

FOR SALE

VIKLA swarm conveyor, automatically traps the swarms. Illustrated circular. Vikla Mfg. Co., Lonsdale, Minnesota.

FOR SALE OR TRADE—For extracted honey, old-fashioned round straw beehives. G. Korn, Berrien Springs, Mich.

SAVE money with a Rietsche foundation press. John Stegedirk, Hubbard, Iowa.

WAX worked into foundation for cash or share. E. C. Snyder, Bloomville, Ohio.

BEESWAX made into first class foundation. Metal eyelets, 40c per 1000, postpaid. Inserting punch, 15c. F. Knorr, Del Mar, Calif.

COMB foundation at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

ELECTRICAL comb honey cutting knives, uncapping knives, $10.00 each; with thermostat, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Michigan.

HONEY packing plant, 12,000 lbs. clover honey, going business, excellent opportunity for honey producer. Landau, 1124 22nd, N. W., Washington, D. C.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE—300 beeway comb-honey supers, division boards and holders for 275 supers. Will accept cash, exchange on packages, bees, or extracted clover honey. Absolutely free from disease. The Stoller Apiaries, Latty, Ohio.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

WINTERED Italian queens, 75c each, any number. Order now. I mail queens every month. D. W. Howell, Shellman, Ga.

FOR SALE—500 colonies bees and equipment in A-1 condition, guaranteed free from disease. W. M. Peacock, Mapleton, Ia.

MOUNTAIN GRAY CAUCASIAN bees and queens. Get in touch with us for your 1935 needs. Bolling Bee Co., Bolling, Ala.

BOOKING orders for package bees and leather-colored Italian queens. Not a hybrid colony in my 39 yards. Write me. Jasper Knight, Hayneville, Alabama.

FOR 1935, Caucasian package bees, nuclei and queens. Can book your order without deposit for April, 1935, delivery at code prices. Lewis & Tillery Bee Co., Greenville, Alabama.

ISLAND bred dark Italian queens, $5 each; choicest, $10.00. Send check or money order. First write Bee Culture Laboratory, Washington, D. C., for permit to import queens. See ad in December Gleanings. E. L. Sechrist, Papeete, Tahiti.

FOR SALE—Pure Italian bees and queens. Nothing but the best. Queens, 75c each. 1 lb. of bees with young queen, $1.75; 2 lbs. of bees with young queen, $2.45; 3 lbs. of bees with young queen, $3.15. Graydon Bros., Route 2, Greenville, Alabama.

THREE-BANDED Italian bees and queens that are real honey gatherers, and gentle to work with, for 1935, at code prices. Satisfaction guaranteed, or your money returned. Alamance Bee Company, George Elmo Curtis, Mgr., Graham, North Carolina.

FOR SALE—40-odd colonies of bees, with A-1 equipment for 150 colonies. Guaranteed free from disease. S. D. Clark, Bayfield, Wis., Box 281.

CHOICE Italian queens. We specialize on Italian queens and will be pleased to quote you for next season. Our 25th year as commercial queen-breeder. White Pine Bee Farms, Rockton, Pa.

BEST mountain gray Caucasian queens and bees for April and May delivery. Select queens, 75c each; 2-lb. package with queen, $2.45; 3-lb. package with queen, $3.15. Booking orders without deposit. P. B. Skinner Bee Co., Greenville, Alabama.

APRIL 1st shipment of swarms and queens from my GULF COAST BEE CO. Apiaries in Louisiana. Guaranteed pure, no disease, live delivery. I know how. I will appreciate your business. QUEENS, 75c each. Two-pound swarms, $2.45 each; three-pound swarms, $3.15 each. Walter T. Kelley Co., Paducah, Kentucky.

PACKAGE bees and queens. Caucasians or Italians reared in separate yards. Finest strain. Each strain is holding old customers and fast making new ones. Each strain will help you make more honey. Lowest code price. Express or parcel post shipment. Ready April 1. Inquiries solicited. Harrison Apiaries, Honoraville, Alabama.

BEES WANTED

WANTED—50 to 500 colonies bees. Edw. Klein, Gurnee, Ill.

WANTED—200 colonies of bees, also amber honey. Riverside Apiaries, Russell, Illinois.

WANTED—To buy 100 colonies bees. Henry Hansen, 4339 Ohio St., Omaha, Nebraska.

WANTED—200 colonies to work on shares, with the privilege of buying. Albert Halsey, Burr Oak, Michigan.

WANTED—Bees and equipment, 150 colonies or more, to work on shares, season 1935. L. D. Gale, 325 So. Fla. Ave., Lakeland, Fla.

WANTED—To hear from beekeeper who has from 50 to 100 colonies; wants change location, help work other bee location free. Box 12, Gleanings in Bee Culture, Medina, Ohio.

HELP WANTED

WANTED—Party with experience and capital to produce twenty or more tons honey; plenty feed. Julius Boeckh, Cresco, Iowa.

WANTED—An experienced queen breeder Give references, etc., first letter. M. C. Berry & Co., Box 684, Montgomery, Ala.

HELP WANTED—Two or three helpers for the season. Give full qualifications and references. M. E. Ballard, Roxbury, N. Y.

WANTED—A party to handle 300 colonies of bees located at and near Menomonie, Wis. M. C. Berry & Co., Box 684, Montgomery, Ala.

WANTED—Young man to work with bees; state age, height, weight, experience and wages expected. Fred D. Lamkin, King Ferry, New York.

WANTED—Reliable young man of good health and habits for coming bee season. Board and room provided. Give full particulars and wages expected. Merritt L. Winn, King Ferry, N. Y.

WANTED—Experienced queen breeder, begin Feb. 15. Package man, begin March 15. Will consider married man with some help to take full charge of branch outfit. Jensen's Apiaries, Crawford, Miss.

WANTED—Industrious young man with clean habits, some experience, to work with bees this season; room and board furnished. Give full qualifications first letter. B. B. Coggshall, Groton, N. Y.

SITUATION WANTED

YOUNG man wants work for season; some experience. Andrew Lettner, Fountain City, Wis.

WANT job as helper with bees, or will work them on shares. R. L. Marsh, Peachland, North Carolina.

POSITION in commercial apiary, preferably in West, by single man, age 23; some experience. State terms. Clem R. Kapler, Cresco, Iowa.

POSITION wanted by single man experienced on bees, poultry and some fruit growing, or helper in queen and package business. Falk, 126 Linden Ave., Ithaca, N. Y.

MISCELLANEOUS

WANTED—A large sized extracting outfit. H. G. Quirin, Bellevue, Ohio.

GENERAL job printing. A. Matson, 21513 Donaldson, Dearborn, Michigan.

WANTED—Foundation mill. Send full description. O. G. Warne, Boulder, Colo.

WANTED—Eight-frame Buckeye honey extractor, good condition. D. C. Stahlman, Buhl, Idaho.

WANTED—Partner to buy half interest in 200-acre farm and bees. Price $2000. If any one interested, write to Gleanings, Box 7, Medina, Ohio.

TRADE my beautiful southern California home and acre (present day value $7000) for apiary and residence, clover or buckwheat preferred. Box 5, Gleanings, Medina, Ohio.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

NORTHERN BRED
BEES and QUEENS
AFTER JUNE 1
From Our Famous 3-banded Italian Stock—Gentle, Industrious.
Good Bees and Queens from Southern Yards After April 15.
THE A. I. ROOT COMPANY, MEDINA, OHIO

Package Bees and Queens

ITALIAN STOCK

The kind we use to produce large crops of honey. We give you advantage of prompt shipment. Guarantee safe arrival and satisfaction, health certificate with each shipment. Send for free circular.

•

W. O. GIBBS CO.
BROOKFIELD, GEORGIA

Fine Italian Queens and Package Bees

•

For deliveries April 1st or thereafter, at prevailing code prices.

•

Holder Apiaries
CITRONELLE, ALABAMA

A Good Rule to Go By

Buy your bees and queens from

ALABAMA APIARIES
MT. PLEASANT, ALA.

Book your order early. Queens, 75c. Packages, $2.45 and $3.15.

JENSEN'S

PACKAGE BEES AND QUEENS FOR 1935

Our pure Three-banded Italians are gaining in popularity as the years go by. Increased capacity, by the establishment of a more southern queen yard, will enable us to supply the best possible queens with the very earliest packages, or for requeening colonies coming through the winter queenless.

A prominent authority of Michigan says, "Those fellows up there swear by Jensen's queens." A big producer in California in ordering, says, "If you can't fill my order with your own stock, please return my M. O. Don't get queens from your neighbors to fill my order." Another extensive operator has this to say, "Your queens were specified for the reason that your strain has proven superior for comb-honey production, and is already dominant in our yards. I have bought queens from many breeders. Uniformity of results is what is being aimed at, and your stuff is being given 'the right of way.'" What would be good in comb-honey in Colorado, would also be good in extracted anywhere.

In addition to supplying your needs with the very best packages and queens, in any quantity, just when you want them, we are going to help you to help the American Honey Institute popularize honey as no other organization can do.

On all orders of $25.00 or more, deduct 1% from the total, and either send direct to the Institute, or to us with your order and we will send it in TO YOUR CREDIT. This in no wise affects our regular pledge to the Institute, but we feel it is "as bread cast upon the waters." If the plan helps you, it will also help us. Let's pull together to put honey in its rightful place.

We guarantee: Purely mated and prolific queens, full weight of LIVE BEES at destination, prompt shipments, and honest, efficient SERVICE that will please you.

JENSEN'S APIARIES, Crawford, Miss., U.S.A.

Package Bees & Queens

ITALIANS CAUCASIANS

Marketing Agreement Prices
With Quality and Service.

Weaver Apiaries, Navasota, Texas

HIGH CLASS JOB PRINTING.
THE A. I. ROOT CO., MEDINA, O.

10,000 Packages - 20,000 Queens

Do You Want Bees, Live Delivery, on Time?

Our 1934 lossage was 12 packages out of several thousand shipped. **MERRILL'S QUALITY BEES AND QUEENS** are just as good as the best. Orders booked without deposit.

Package Prices With Queens

2-lb. packages, $2.45. 3-lb. packages, $3.15.

Select Queens, 75c.

If the proposed 15% dealers' discount is approved, same will apply to dealers only.

MERRILL BEE COMPANY, BUCATUNNA, MISS.
Mississippi's Oldest Shippers

All Ads Are the Same

MOST SHIPPERS CLAIM TO BE SUPERIOR—

All promise extra quality.
All promise the best service.
All promise any and everything.

According to each ad you could shut your eyes and pick with safety.

IT MAY BE SO—

But write—

The Puett Company

"Where satisfaction is a certainty."

HAHIRA, GEORGIA

BETTER BRED ITALIAN QUEENS & PACKAGES

We will be ready to serve you this season with our improved stock of Better-Bred Bees. It is our aim to give you bees that will be better honey-gatherers, hardier and more disease resistant. Let us book your orders. We give the quickest service possible.

CALVERT APIARIES, CALVERT, ALABAMA

100% Increased Capacity for 1935

• Popular demand for our stock has created an incentive to increase our capacity again this year. Undoubtedly this increased demand was based on satisfactory bees and service.

• During 1934 we shipped 400% more bees than 1933 which was only a fraction of the business we received, as orders for hundreds of packages had to be returned, to our regret.

• Our policy is to furnish only bees and queens reared in our own apiaries, as this assures uniform stock as well as satisfactory service. Have your order booked with us NOW for best shipping dates. No deposit required for this service. Minimum Marketing Agreement prices effective. Any changes subject to adjustment.

GARON BEE COMPANY, DONALDSONVILLE, LOUISIANA

American Honey Institute Honor Roll

Memberships received, April 1, 1934, to December 31, 1934.

Stars indicate those members received through the free queen offer made by Stover Apiaries, Mayhew, Mississippi.

Those names with the figure 1 before them are those of members realized through the free queen offer of S. J. Head, B. & B. Apiaries, Atchafalaya, Louisiana.

If anyone's name is misspelled or omitted, we would appreciate being informed of it so that we can make the necessary corrections.

Supporting Members—The A. I. Root Company, Medina, Ohio, $250; Dadant & Sons, Hamilton, Ill., $225; W. F. Straub & Co., Chicago, Illinois, $187.50; G. B. Lewis Co., Watertown, Wis., $152.50; Stover Apiaries, Mayhew, Miss., $93.75; August Lotz Co., Boyd, Wis., $75; Superior Honey Co., Ogden, Utah, $75; A. G. Woodman Co., Grand Rapids, Mich., $54; Hazel-Atlas Glass Co., Wheeling, W. Va., $50; Jensen Apiaries, Crawford, Miss., $30; M. H. Hunt & Son, Lansing, Mich., $25; C. W. Aeppler Co., Oconomowoc, Wis., $25; W. T. Falconer Mfg. Co., Falconer, N. Y., $25; Fred W. Muth Co., Cincinnati, O., $25; A. I. Root Company, Syracuse, N. Y., $25; A. I. Root Company, Council Bluffs, Ia., $18.75; Owens-Illinois Glass Co., Toledo, Ohio, $15; Colorado Honey Producers' Assn., Denver, Colo., $10; A. I. Root Company (A. G. Gill), Chicago, Ill., $25. Total, $1386.50.

Contributing Members

Alabama—W. E. Harrell, Hayneville, $20; J. Knight, Hayneville, $15; D. Running, Sumterville, $15; Caucasian Apiaries, Brooklyn, $10; P. N. Williams, Mt. Willing, $10; Bolling Bee Co., Bolling, $10; Citronelle Bee Co., Inc., Citronelle, $10; The Holder Apiaries, Citronelle, $10; H. C. Short, Fitzpatrick, $10; W. F. Forehand & Sons, Ft. Deposit, $10; Alabama Apiaries, Mt. Pleasant, $10; J. M. Cutts & Sons, Montgomery, $10; M. C. Berry, Montgomery, $7; Alabama State Bee Assn., J. M. Robinson, Auburn, $6; N. B. Smith & Co., Ft. Deposit, $5; Calvert Apiaries, Calvert, $5; Taylor Apiaries, Luverne, $5; J. F. McVay, Jackson, $5; Melvin Talley, Crenshaw Apiary, Rutledge, $5; Tillery Apiary, Greenville, $2.50; Lewis & Tillery Bee Co., Greenville, $2.50; *Mrs. R. E. McGee, Long Island, $1; *B. L. Merkel, Sylacauga, $1; Roger Merkel, Sylacauga, $1; Graydon Bros., Greenville, $1. Total, $187.

Arizona—M. G. Loveitt, Phoenix, $6; Loveitt Honey Co., Phoenix, $5; Mrs. Josephine Randolph, Casa Grande, $4; Niles D. Benson, Phoenix, $3.25; P. H. Benson, Palo Verde, $3.25; Leslie Wedgeworth, Oracle, $1. Total, $22.50.

California—C. A. Brown (life member), Saugus, $20; G. Adamson, Pomona, $17.20; Logan Kitfischer, Redlands, $16.33; C. E. Lush, Orange, $15.25; Jess Hepner, Covina, $14.25; Harry Heath, Cypress, $10.75; L. B. Crawford, Santa Ana, $10; H. M. Krebs, Sacramento, $10; *Geo. E. Smith, Lone Pine, $10; T. H. Shephard, Calexico, $10; Helen Weightman, Los Angeles, $9.90; M. P. Woodworth, Glendora, $9.60; Max Mayer, Los Angeles, $8.25; H. J. Crawford, Olive, $6.30; Frank Kittinger, LaVerne, $6; Geo. B. Wright, San Diego, $6; Bryant & Cookinham, Los Angeles, $5; J. W. Vasey, Miramor, $5; B-Z-B Honey Co., Alhambra, $5; H. A. Hansen, Sierra Madre, $5; San Bernardino Honey Prod. Ass'n., Redlands, $5; John S. Semon, Sierra Madre, $5; Robert H. Reed, San Bernardino, $4.75; J. E. Eckert, Davis, $4; Mark L. S. John, Ripon, $4; B. B. Cole, Wrest, $4; Wm. R. Clark, Modesto, $4; J. V. Schultz, Orange, $4; Geo. W. Edwards, Sealey, $3; H. Frank, Montica, $3; Geo. Bettfreund, Galt, $3; J. L. Mathiesen, Santa Monica, $1; L. Allen, San Mateo, $1; Mrs. A. P. Marks, Santa Paula, $1; J. A. Tillinghast, Anaheim, $1; L. B. Bell (Bell Apiaries), Orange, $1; W. L. Carruthers, Los Angeles, $1; I. W. Myers, Colusa, $1; *Robert Kolsbun, Canoga Park, $1; *Edward Carney, Campbell, $1; *Edw. J. Babb, Pasadena, $1; A. E. Hiddleswart, Onyx, $1; *W. A. Holmberg, Ripon, $1. Total, $255.58.

Colorado—J. D. Caldwell, Rifle, $20; L. R. Rice., Greeley, $10; Carl Asmussen, Palisade, $7; J. E. Wadleigh, LaJunta, $5; N. C. Nielsen, Center, $1; Paul Emery, Greeley, $1; Hilda Carson, Littleton, $1; F. R. Smythe, Saquache, $1; *J. S. Nease, Salida, $1. Total, $45.

Connecticut—Connecticut State Bee Ass'n. Meriden, $25; Allen Latham, Norwichtown, $7; P. T. Walden, New Haven, $5; James H. Cooke, Waterbury, $1; *B. C. Scapino, Terryville, $1. Total, 39.00.

District of Columbia—C. E. Burnside, Washington, $5. Total, $5.

Florida—L. M. Lewis, Havanna, $19; M. O. Strickland, Sopchoppy, $5; E. D. Moon, Tallahassee, $5; *J. E. Johnston, Inverness, $2; *P. D. Shuping, Sharpes, $2; *Alfred H. Pering, Dade City, $1; *L. S. Henley, Inverness, $1; *Mrs. E. A. Odlund, Demory Hill, $1; O. P. Harvey, Tallahassee, $1; J. T. DeLacy, Havana, $1; Robert E. Foster, Gainesville, $1; Cozelian Bee Yard, St. Petersburg, $1; *Harry F. Malone, Orsino, $1; *L. N. Hodges, Detray Beach, $1; *Jas. A. Callan, Orlando, $1. Total, $43.

Georgia—York Bee Co. (H. F. York), Jesup, $100; Clyde Blankenship, Helena, $5; Maddox Commission Co., Bambridge, $5; *J. R. Spence, Camilla, $3; *August Wolbert, Ellabelle, $1; *Mrs. L. A. Allen, Jonesboro, $1; *T. E. Dennington, Decatur, $1; George Bellinger, Atlanta, $1; B. C. Shepard, Savannah, $1. Total, $118.

Idaho—J. Epstein, Idaho Falls, $25; Grover Mobley, Rigby, $24; Earl J. Miller, Blackfoot, $18; Meyer Bros., Rigby, $12; Lee Browning, Rexburg, $9; C. M. Hurst, Blackfoot, $6; E. M. Nelson, Blackfoot, $6; Arthur Shore, Blackfoot, $6; H. B. Weber, Blackfoot, $6; Wm. Mitchell, Shelley, $6; H. R. Bowen, Roberts, $6 Roy Mobley, Rigby, $6; Robert E. Miller, Twin Falls, $5; Lloyd F. Randall, Idaho Falls, $3; Heber C. Fowler, Rexburg, $3; O. S. Cox, Shelley, $3; Budge Bros., Malad, $3; Sam P. Sealey, Sterling, $3; Wm. T. Gibson, Rexburg, $3; Wm. E. Liebert, St. Anthony, $3; *Arthur Sarff, Pocatello, $1; J. L. Donaldson, Nampa, $1. Total, $158.

Illinois—C. Holm, Genoa, $14; C. J. Anderson, Morris, $12.13; Saline-Gallatin Co. Bee As'n., Ridgeway, $5; R. H. Rocke, Morton, $5; Ellsworth A. Meineke, Arlington Heights, $5; A. G. Gill, Evanston, $5; Edward Meier, Bluffs, $3.90; Lawrence Fisher, Woodson, $3.60; A. L. Holmes, Jacksonville, $3.60; W. G. Duckwall, Jacksonville, $3.60; J. J. Vargo, Granite City, $3.60; LaSalle and Bureau Co. Bee Ass'n., LaSalle, $2; L. A. Dean, Big Rock, $2; H. S. Rogers, Chicago, $2; Geo. Lynn, Lockport, $2; *Alfred Johnson, Rankin, $2; A. A. Augenstein, Dakota, $2; Harold W. Laughlin, Butler, $2; Wm. S. Kirk, Farmersville, $1.50; C. A. Rife, Naperville, $1.50; Mr. and Mrs. C. G. Strieder, Brimfield, $1.50; O. M. Barcus, Genoa, $1.00; Wesley Osborn, Hillsboro, $1; *M. F. Blake, Mt. Morris, $1; *Wm. H. Hassler, Princeton, $1; *Curtis Taylor, Mounds, $1; *Roy Page, McHenry, $1; *J. C. Schultz, Chicago, $1; *J. Floyd Strope, Pekin, $1; *George Bigler, Clarendon Hills, $1; Richard K. Evans, Hoopeston, $1; Leo Retzinger, Northbrook, $1; Harvey Foote, Green Valley, $1; S. S. Clausen, Oregon, $1; Robert LaRosh, Pekin, $1; Adolph Bartruff, Pekin, $1; Fred F. Belloth, Mt. Pulaski, $1; Walter Scott Lohnes, Pekin, $1; S. A. Tyler, San Jose, $1; R. E. Rankin, Payson, $1; J. Skinner, Albion, $1; Smith's Apiary, Greenville, $1; *Oltmanns Oltmann, Baileyville, $1; J. Baab, Chicago, $1; O. W. Kennett, Ohlman, $1; A. Clough, Donnellson, $1; D. W. Greenwood, Wheaton; Carson Donnell, Donaldson, $1; Phillips Krebs, Marissa, $1.

(Continued in next month's issue.)

PACKAGE BEES & QUEENS
Code Prices.
None better.
J. W. DI LULLO
ANDERSON, CALIF.

HIGH GRADE ITALIAN QUEENS
Write for our free book, "About Bees," which is a treatise on Beekeeping for the beginner as well as the commercial Beekeeper.
JAY SMITH
ROUTE FIVE, VINCENNES, INDIANA.

SMITH'S
Bees and Queens
Again we offer as good bees and queens as can be reared at lowest prices under Marketing Agreement. Write for particulars and surprising facts about our expert delivery service.
N. B. SMITH & CO.
CALHOUN, ALABAMA

Our 1935
Package Bees
Will not disappoint you. Overweight, uniform crates, select young laying queens, three-banded Italian honey-producing stock.
••
Prompt Shipment
and satisfaction at lowest possible price. Book orders early, no deposit required.
••
Citronelle Bee Co., Inc.
J. T. Haertel, Mgr.
CITRONELLE, ALABAMA

ITALIAN BEES and QUEENS
(Packages and Nuclei with Select Queens)

2-pound package	$2.45
2-frame nucleus and 1 lb. bees	2.55
1-frame nucleus and 2 lbs. bees	2.85
3-pound package	3.15
Each additional pound of bees	.70
Each additional frame of brood	.40
Select untested queens	.75

Our guarantee: Prompt service, quality, safe arrival. 10% deposit books order in advance. Circular, Price List Free.
CLOVERLAND APIARIES, HAMBURG, LA.

Norman Bros. **Bright Three-Banded Italians**
Mr. Beekeeper, with uniform prices set by code, quality and service are to be considered. Take no chance, buy the best queens for bigger profits. Many years of careful selecting and breeding of the highest quality possible, such as honey production, beauty, gentleness, size and color, means a saving to you when you order **NORMAN BROS.'** queens and bees. We guarantee safe arrival, health certificate, full weight of bees, light weight cages, and satisfaction in U. S. A. and Canada.
PRICES UNTIL JUNE 1st:
Untested queens, any number.....$0.75 each
Tested queens, double the price of unt. queens.
2-lb. pkg. with queen, any number..$2.45 each
3-lb. pkg. with queen, any number... 3.15 each
Norman Bros. Apiaries, Ramer, Ala.

WE TAKE this opportunity to wish you all a Happy and Prosperous year and to thank our many customers for their hearty cooperation. Also to remind you we will be able to supply you with those large gentle **GOLDEN ITALIANS** noted for their honey producing qualities; for
Remember well and bear in mind,
Better Bees and Queens are hard to find.
At the Valdosta, Ga., meeting we heard buyers discuss cage requirements and faults. Ours met all requirements.
Prices in accordance with the Government Marketing Agreement. Write for descriptive circular. Early booking will be appreciated. No deposit.
Stevenson's Apiaries
WESTWEGO, LOUISIANA

Hilbert Method Cut Comb Honey
Doubled in 1934. There's a reason. Get it by writing for our 1935 catalog containing full information.
Jas. E. Hilbert, Traverse City, Michigan.

Three-band Italian Queens and Package Bees

I SHIP OVERWEIGHT PACKAGES OF YOUNG BEES
ON THE DAY YOU WANT THEM.

Untested queens.....75c each, any number
Two-pound packages bees....$2.45 each, with queens, any number
$1.70 each, without queens.
Three-pound packages bees....$3.15 each, with queens, any number
$2.40 each, without queens.

If bees are wanted shipped by mail, add 10c for each package, plus postage. Package weight, 6 and 7 pounds. I guarantee queens or bees to reach you alive in good condition.

D. C. JACKSON, FUNSTON, GEORGIA

Three-banded Italian Queens and Package Bees

SHASTA APIARIES

SHASTA, Shasta Co., CALIF.

QUEEN REARING FOR OVER THIRTY YEARS

Geo. W. Moore *F. W. Chapman*

Package Bees & Queens for 1935

New bees. The reason we say "new" is because we have not seen anything to equal them and they are the coming bees of the future. We stated in former advertising that we had imported several breeding queens for our yards from a noted breeder in northern Italy. We have given this strain of Italians a thorough test in our yards the past year and find them not only highly satisfactory, but surpass any other strain we have seen or tried out so far. The bees are dark leather color or three-banded, very hardy, gentle, great honey-gatherers and the queens are extra prolific, meaning more eggs and stronger colonies. These are the bees for the honey producers, cutting down overhead expenses with larger yields.

If it is package bees in any quantity, we are on the job to give you unsurpassed service and highest quality. Our output last season was around twelve tons of bees, though we had very bad weather conditions all through the shipping season. Full weights, safe arrival, and satisfaction guaranteed. Your choice of packages headed with queens reared from our imported stock or light color strain. Prices are the lowest permitted under the marketing agreement by authority of the A. A. A. Book your order now for shipping date wanted, same as many others are doing and do not put it off longer.

Prices: Untested Italian Queens, 75c each, any number; 2-lb. packages Italian bees with queens, $2.45 each, any number; 3-lb. packages Italian bees with queens, $3.15 each, any number.

You may also remember we are prepared to furnish anything you want in the bee supply line. Lewis Beeware and Dadant's Foundation.

York Bee Company, Jesup, Georgia

(THE HOME OF QUALITY PRODUCTS)

We Could

run a big ad with high-sounding phrases, but our record for quality, prompt shipment, and fair dealing is so well known to buyers of package bees and queens that this is not necessary. Ask your neighbors or bee inspector. Now booking orders at "Marketing Agreement" prices. 10% cash books your order. Write for circular.

J. M. Cutts & Sons

R. NO. 1, MONTGOMERY, ALA.

GASPARD'S

High Quality Golden and Three-banded Italian Queens and Package Bees for Spring, 1935, at the following prices:

2-lb. pkg. bees net with queen..$2.45 ea.
3-lb. pkg. bees net with queen.. 3.15 ea.

It is optional or choice to buyer if packages are shipped on comb or combless. If larger packages are wanted, add 70 cents for each additional pound of bees and 70 cents for each additional comb. Add same to above 2-lb. and 3-lb. package. Safe arrival guarantee, and a health certificate with each shipment. 15% books your order. Balance at shipping time. Shipping season starts April 1. Book early and reserve shipping date. Address—

J. L. GASPARD, HESSMER, LA.

Package Bees

We are prepared to furnish you high quality package bees which we guarantee to reach you in good condition and be entirely satisfactory in every respect.

Italian Queens

Our queens are reared from the best breeders obtainable and by the best methods and are guaranteed to please you. All unsatisfactory ones will be replaced.

——PRICES——

2-lb. packages with queens...$2.45
3-lb. packages with queens.... 3.15
Untested Italian queens..... .75

To remember our address—you are already thinking of bees; for the town, Mayhew, an Indian Chief; for the State, the Father of Waters.

Bees, Mayhew, Miss.

California Apiaries

Package Bees - Italian Queens

At Minimum Prices for Package Bees and Queens Produced in the U. S.

Select young laying Italian Queens.....75c each postpaid.
Two-pound package with queen..$2.45 each, by express collect.
Three-pound package with queen 3.15 each, by express collect.
For package by mail.....Add 10c each, plus postage.

What scientific breeding has accomplished in improving nearly all of our domestic animals, we have in many years of constant selection of stock showing the greater number of desirable qualities, developed a superior strain of gentle Italian honey bees. The express company says we are one of the largest shippers of package bees in the world. If this is right or not, we do not know, but we do **KNOW** that no one ships **BETTER** young bees and queens than we do. We make a real guarantee that **YOU** must be entirely satisfied, delivery on the day you wish and the quality you have a right to expect.

"The Best now cost no more than JUST BEES."

J. E. Wing, Cottonwood, California

"It's our only business—Not a side line."

Package Colonies, Ohio, Summer 1934.

••

We offer the same good quality for 1935.

YOUNG, PURE, THREE-BANDED ITALIAN BEES

Select young laying queens. Gentle, vigorous, honey-producing stock.

PRICES APRIL 10 to MAY 31:

2-lb. pkgs. with queens.....$2.45 each
3-lb. pkgs. with queens..... 3.15 each
Select 1935 laying queens..... .75 each

Accredited and certified by the Alabama Dept. of Agriculture, and guaranteed to please you.

H. C. SHORT
FITZPATRICK, ALA.

Package Bees

Overweight Packages.
Light Shipping Cages.
Pure Mated Queens.
No Disease, Safe Arrival.
Prompt Shipment and Satisfaction
Is what you should expect in 1935. We guarantee this, and will be better prepared to make good our guarantee than ever before. Booking orders now without deposit. Reserve your shipping date early. Don't be disappointed.

The Crowville Apiaries, Winnsboro, Rt. 1, La.
J. J. Scott, Prop.

DO NOT LET YOUR SUBSCRIPTION TO GLEANINGS IN BEE CULTURE EXPIRE

COMING!

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"Beekeeping in Hawaii"

Written of the World's Largest Beekeeper.

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